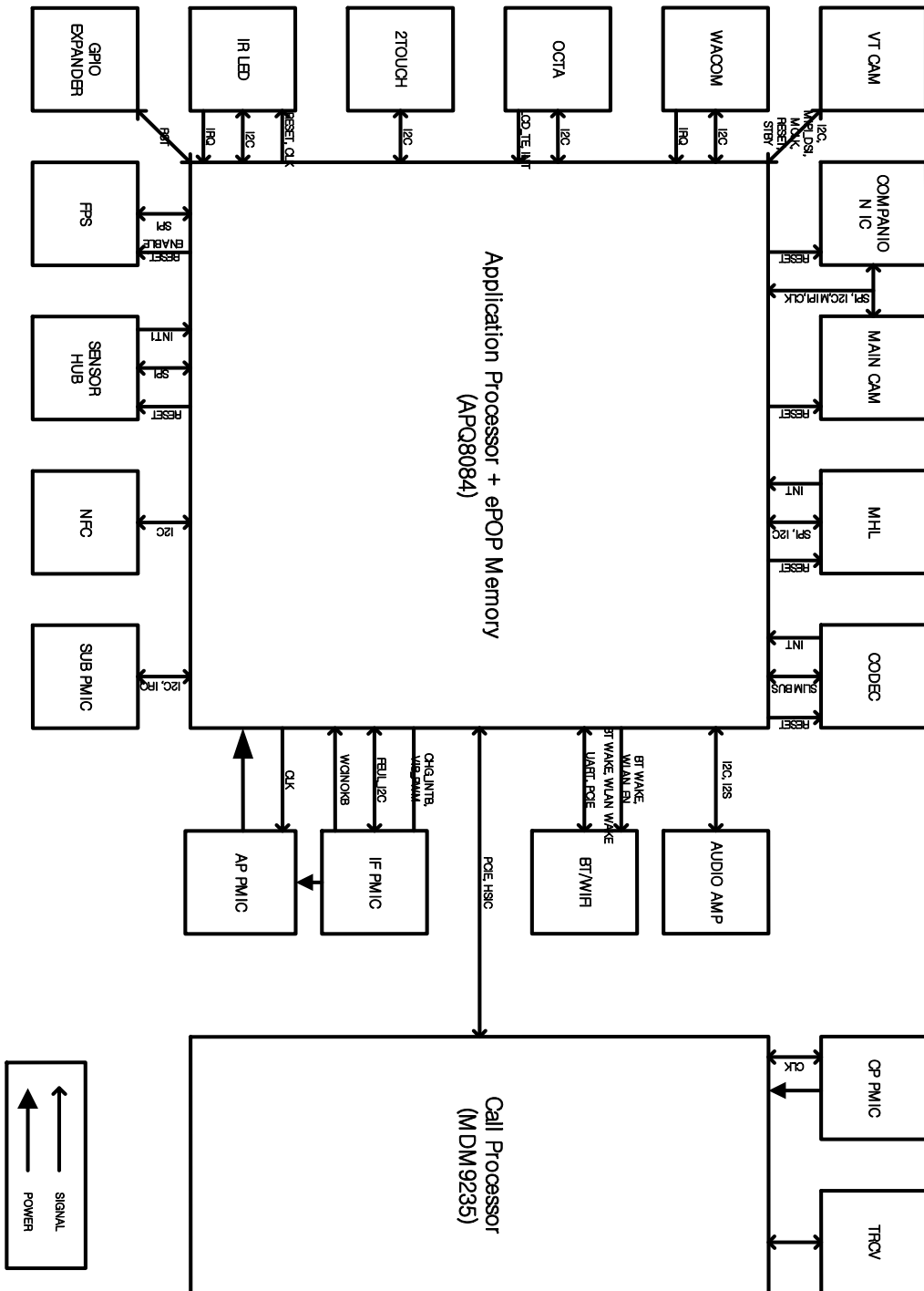


# 8. Level 3 Repair

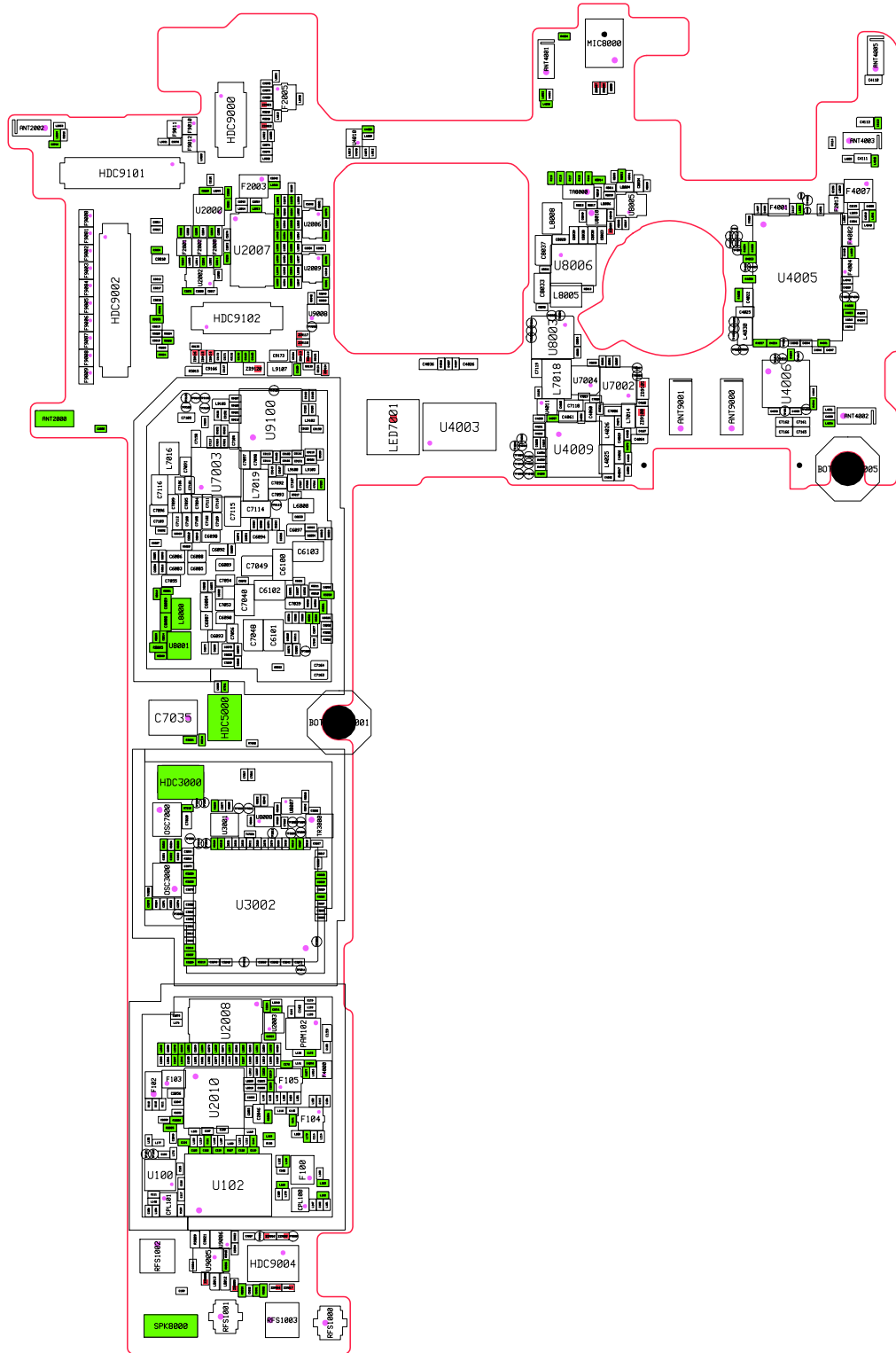
## 8-1. Block Diagram

SM-N915G Baseband  
Block Diagram

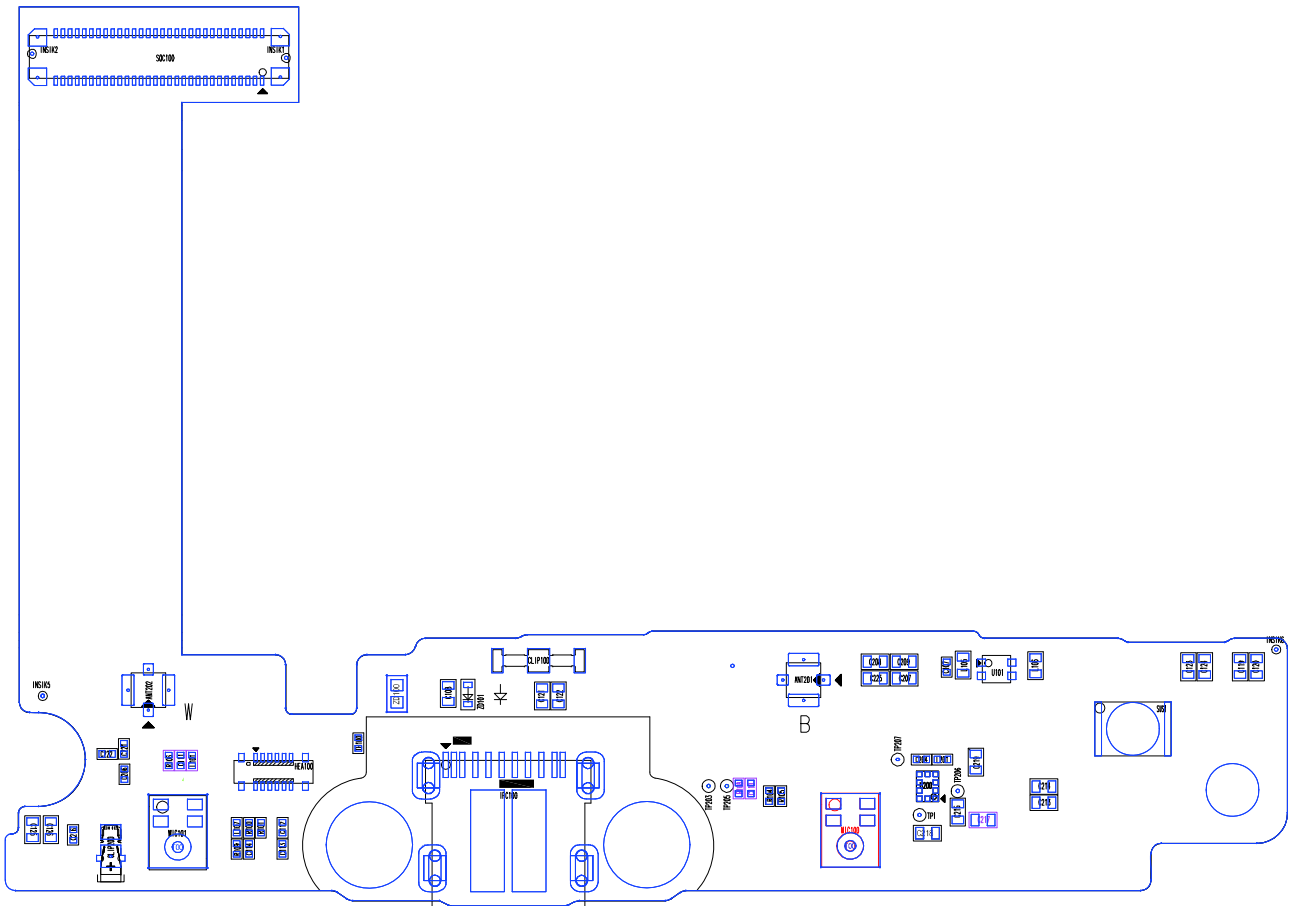




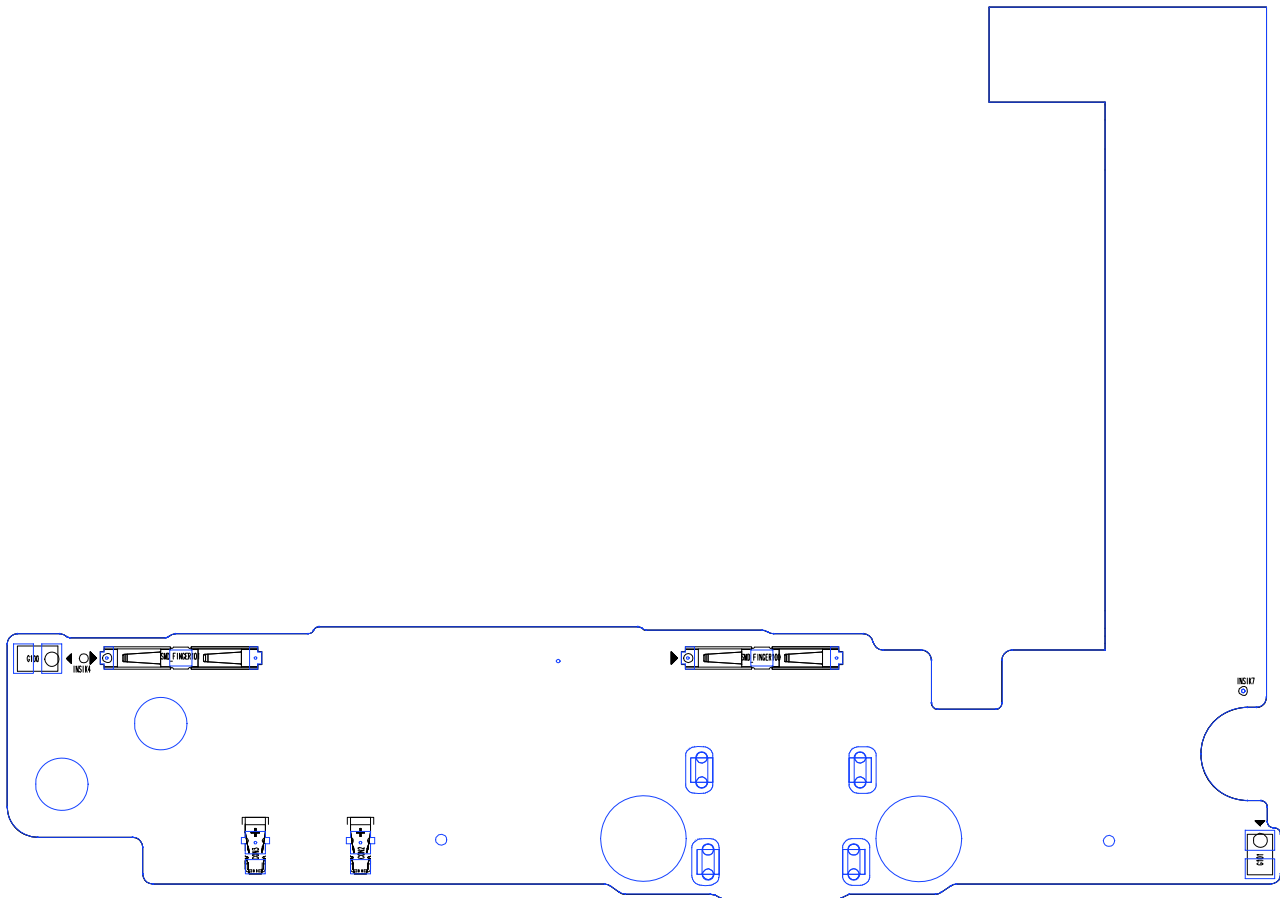
8-2-2. Bottom



8-2-3. Sub PCB Top

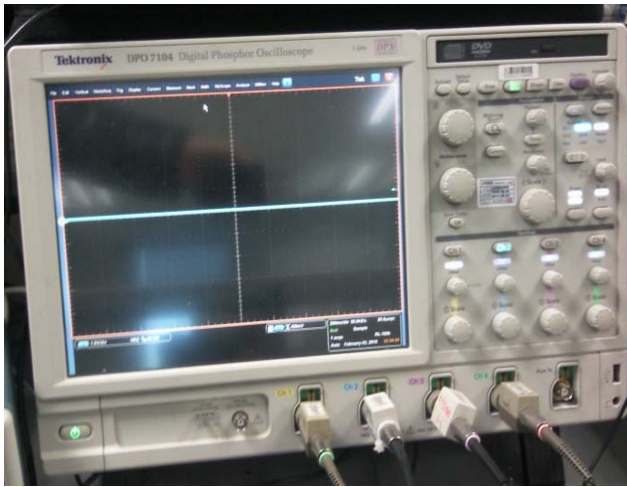


### 8-2-4. Sub PCB Bottom



### 8-3. Flow Chart of Troubleshooting

#### Equipments



↑ Oscilloscope



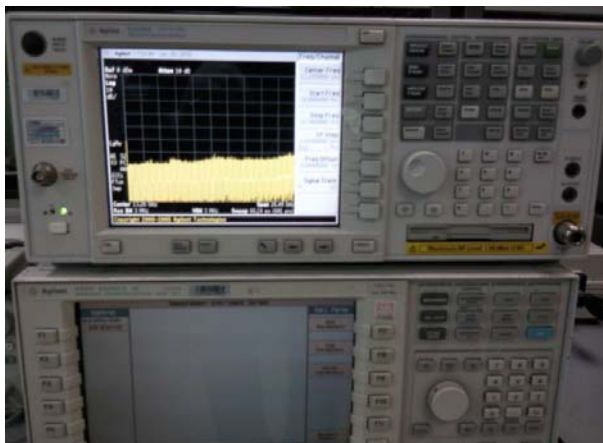
↑ Digital Multimeter



↑ Power Supply



↑ + driver, ESD Safe Tweezer

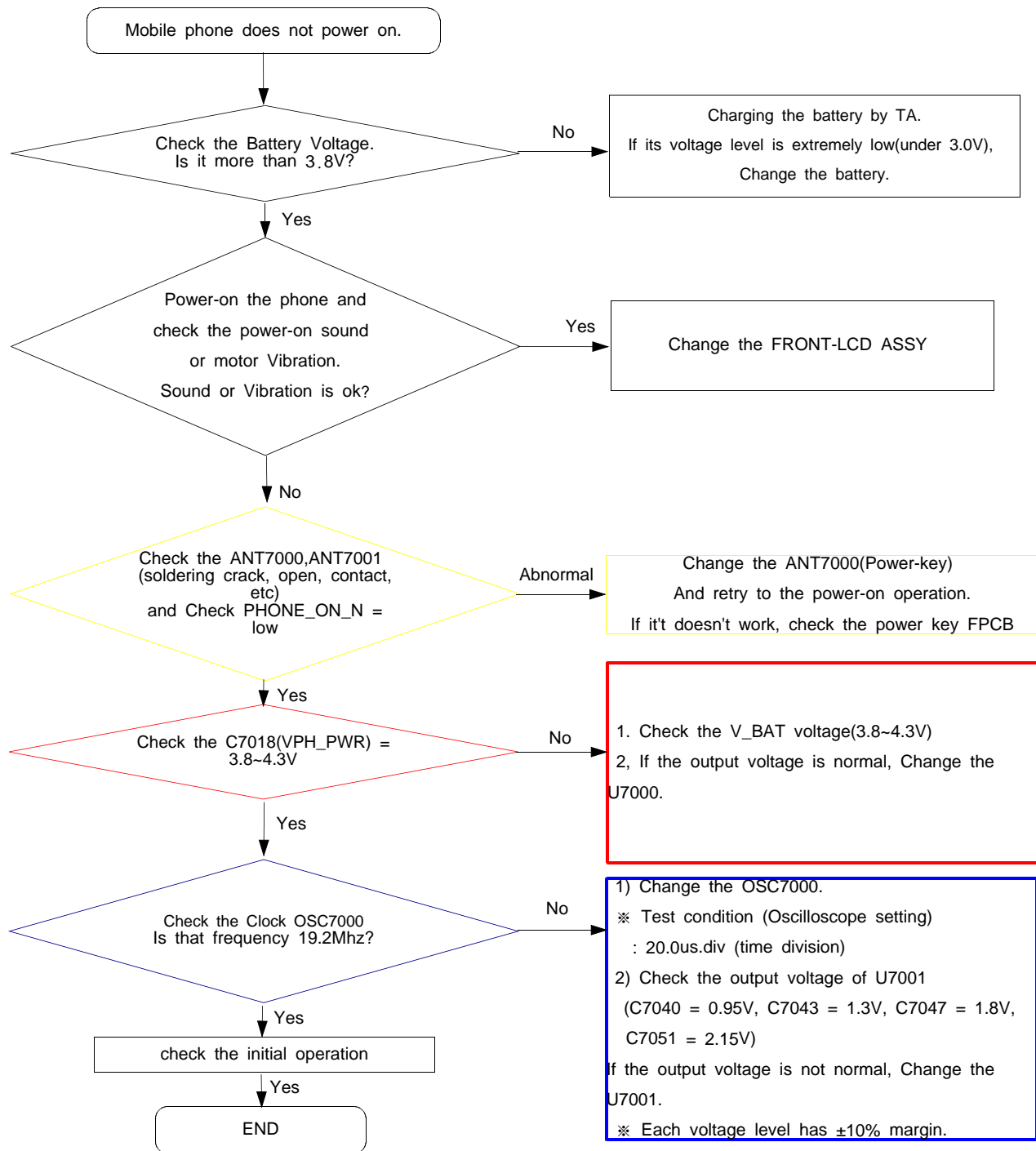


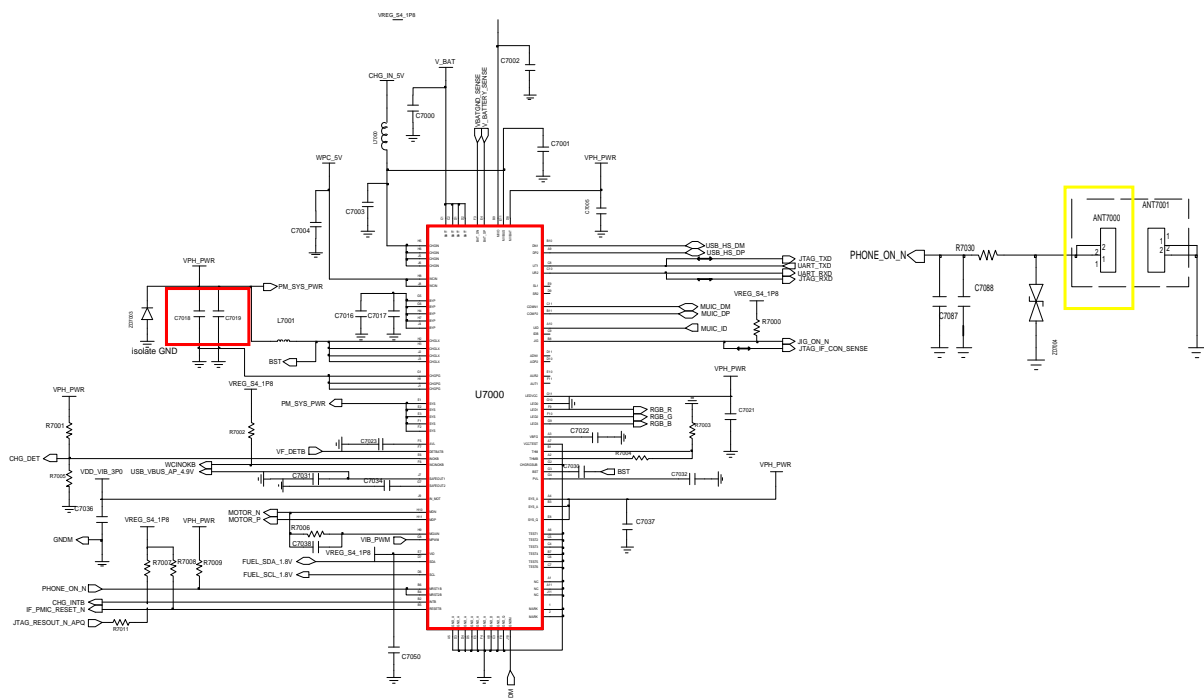
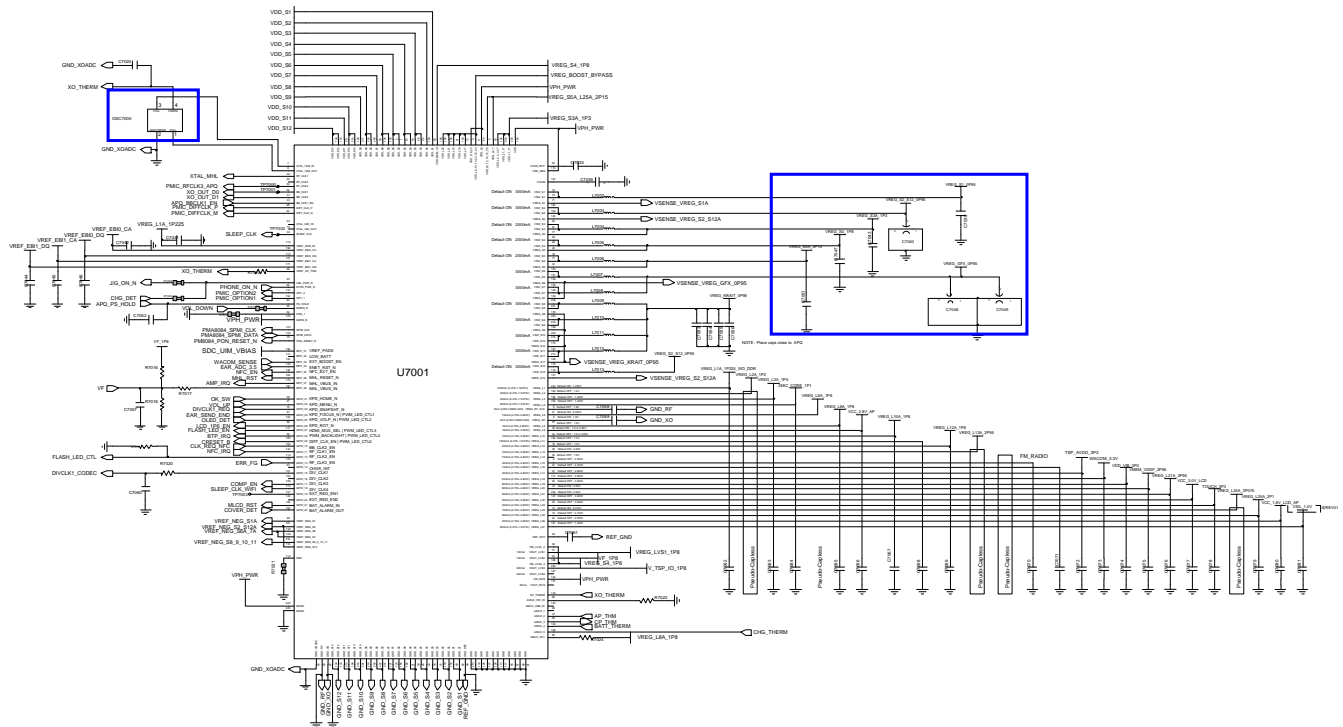
↑ 8960 & Spectrum Analyzer



↑ Soldering iron

8-3-1. Power On

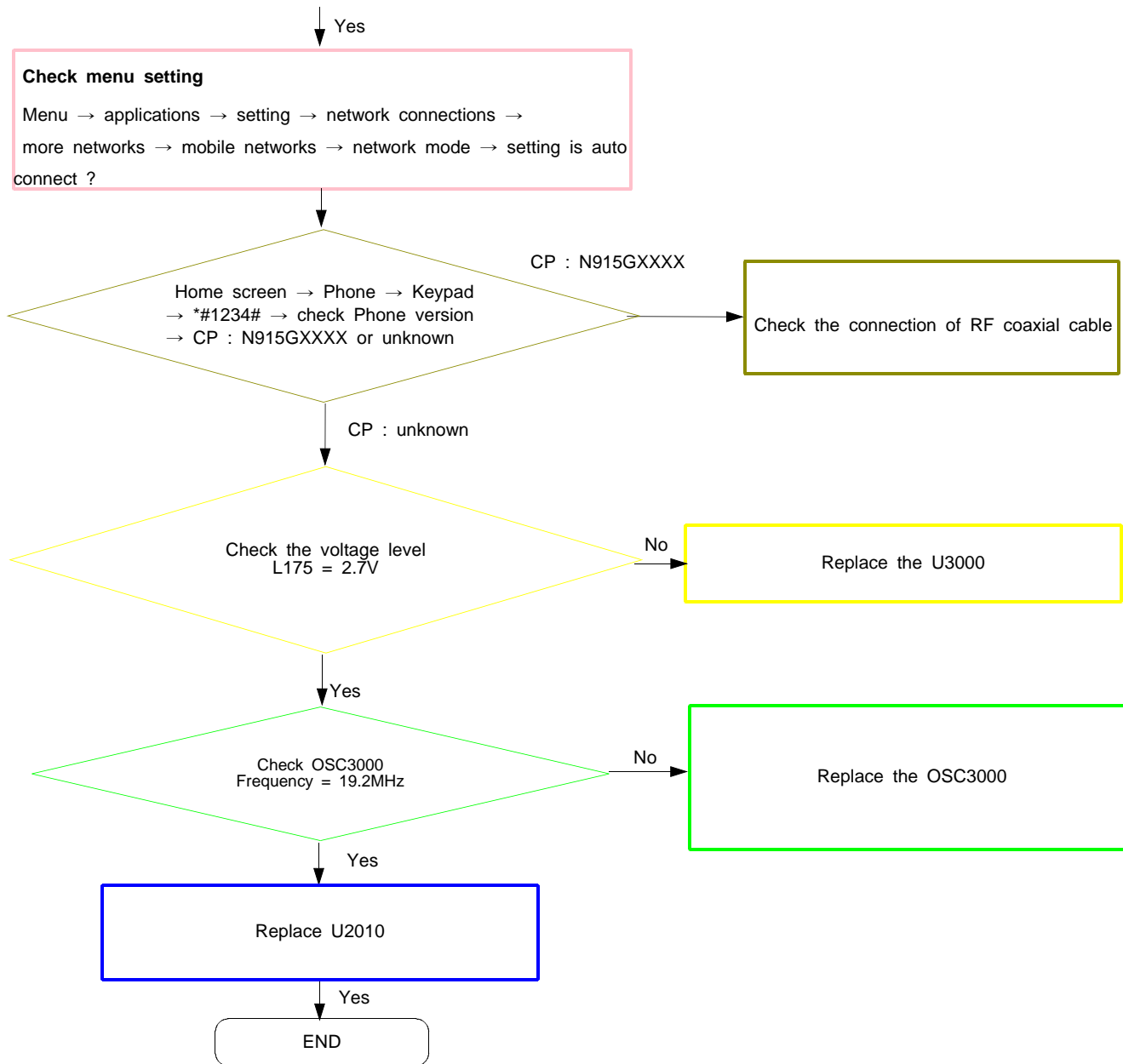






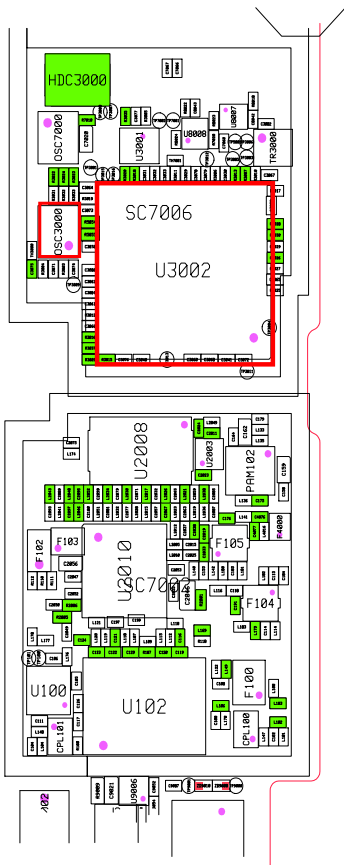
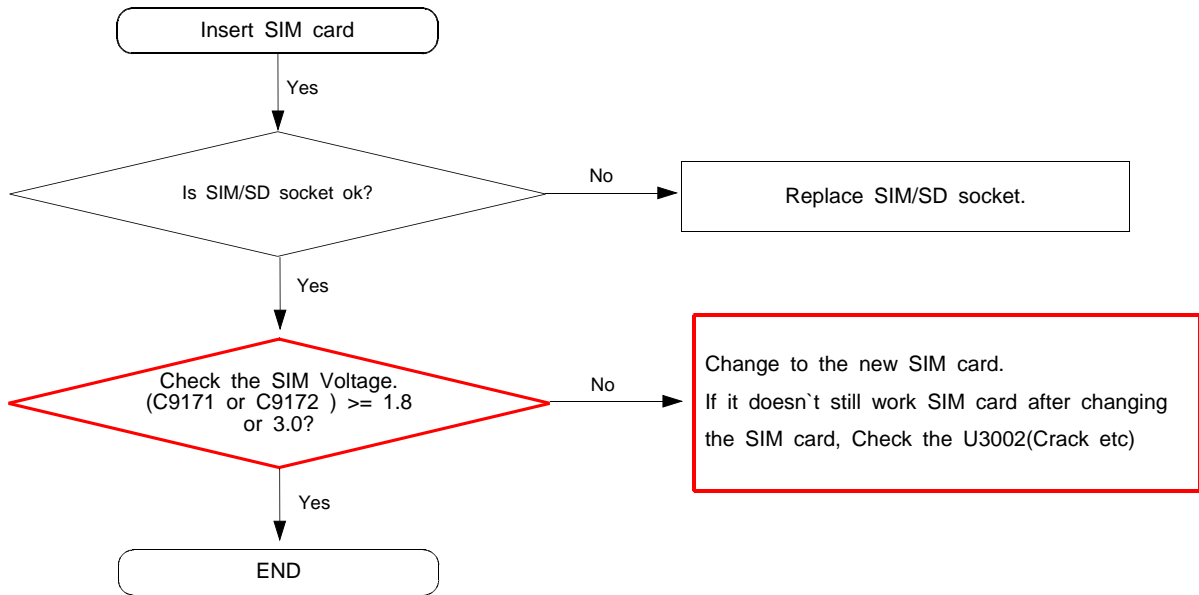


8-3-3. No Service

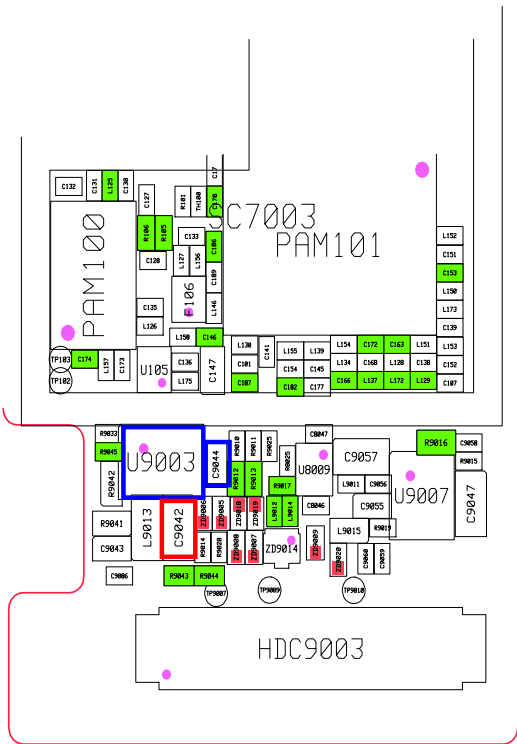
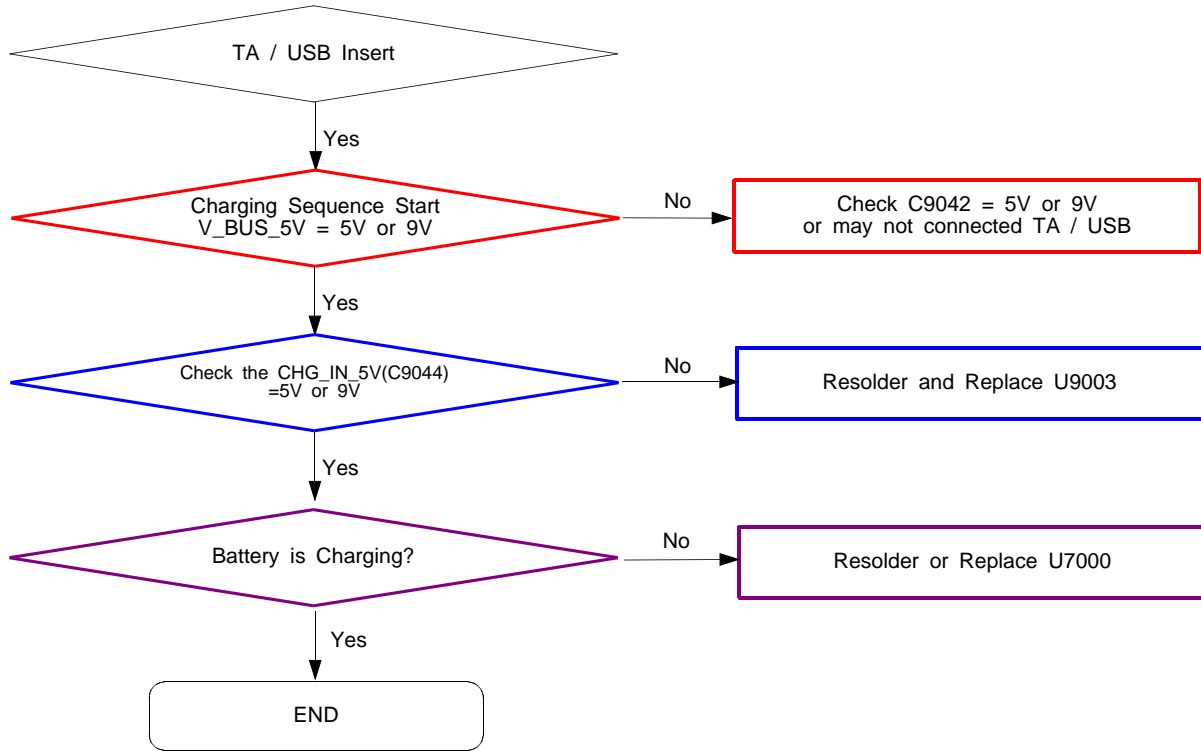




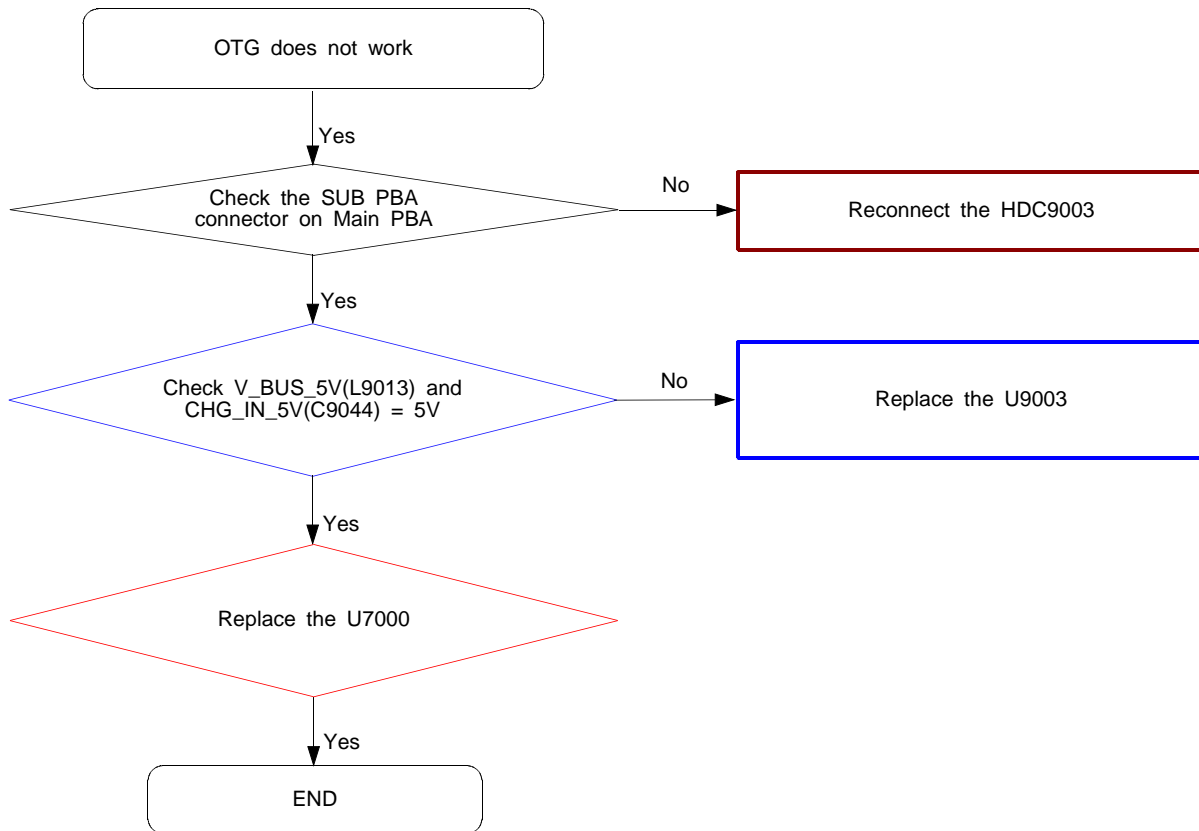
### 8-3-4. Sim Part



### 8-3-5. Charging Part

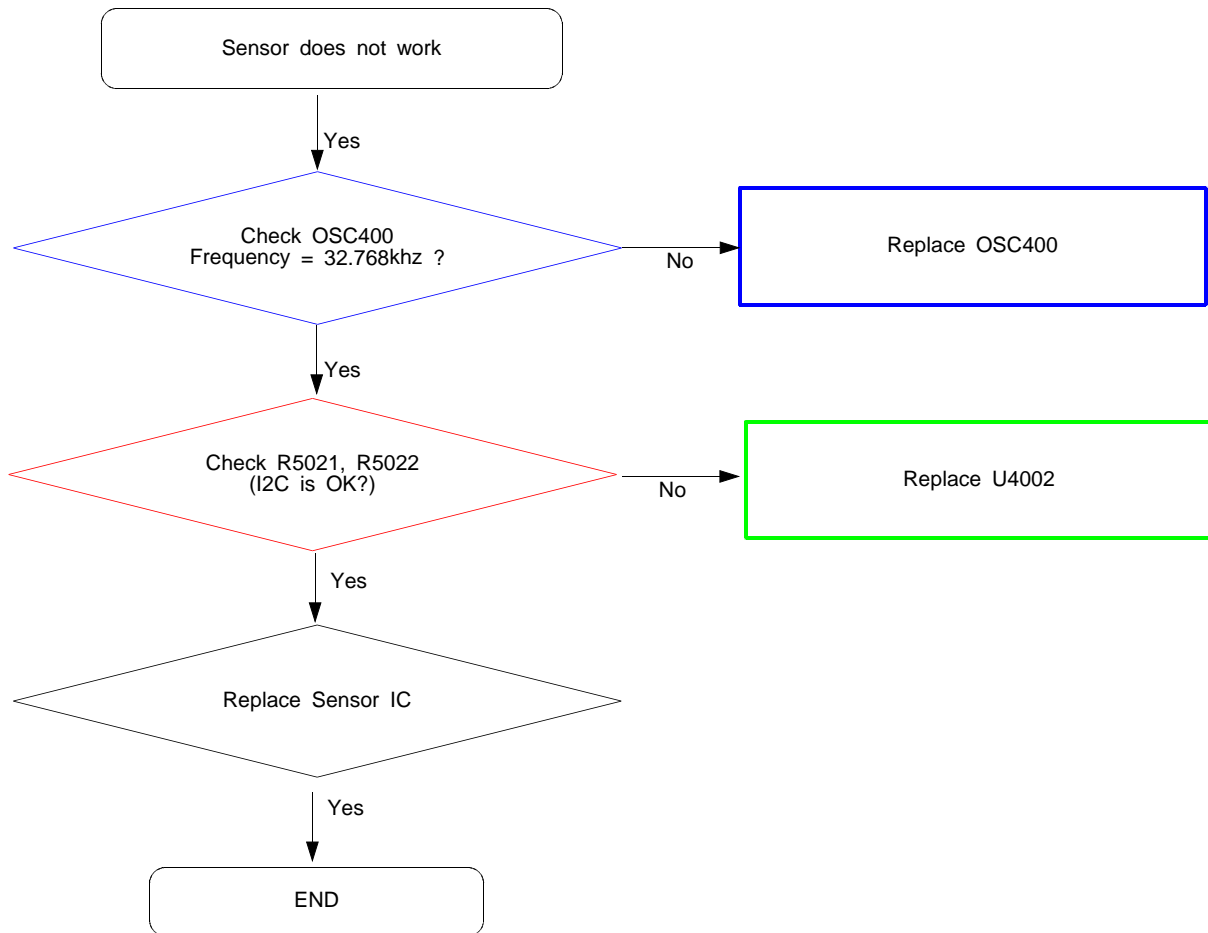


8-3-6. OTG

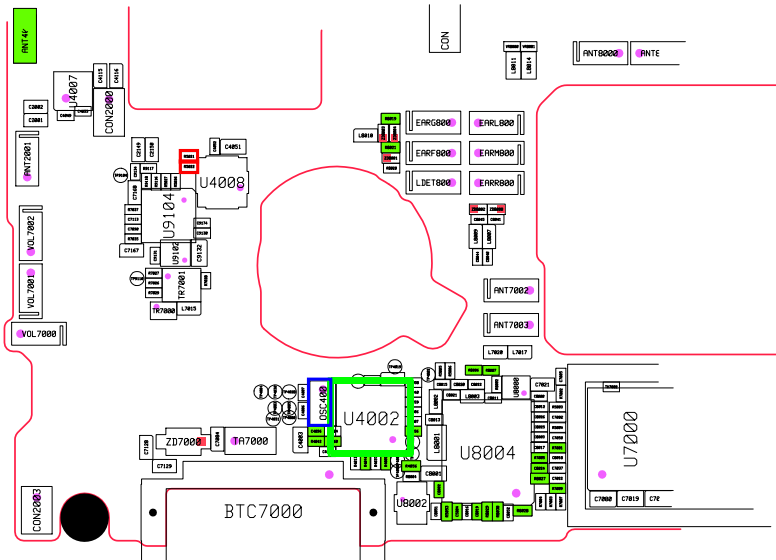
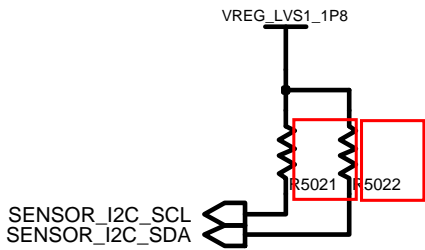
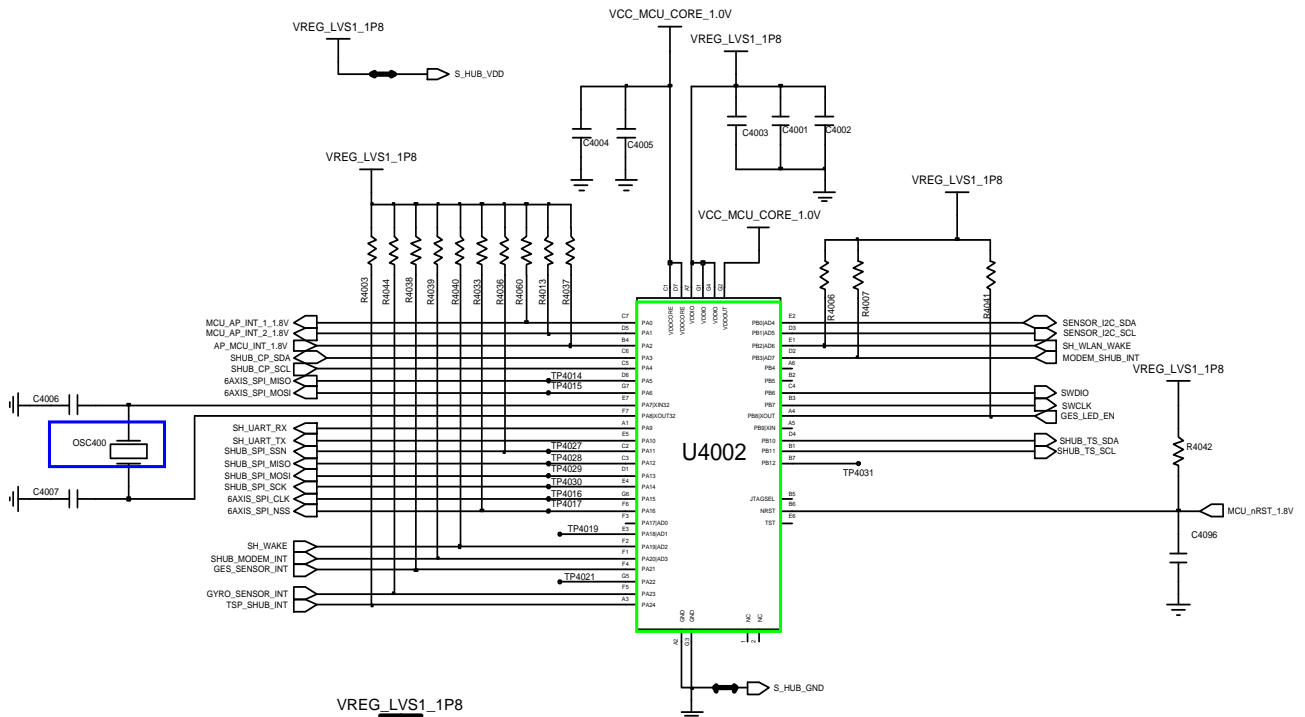




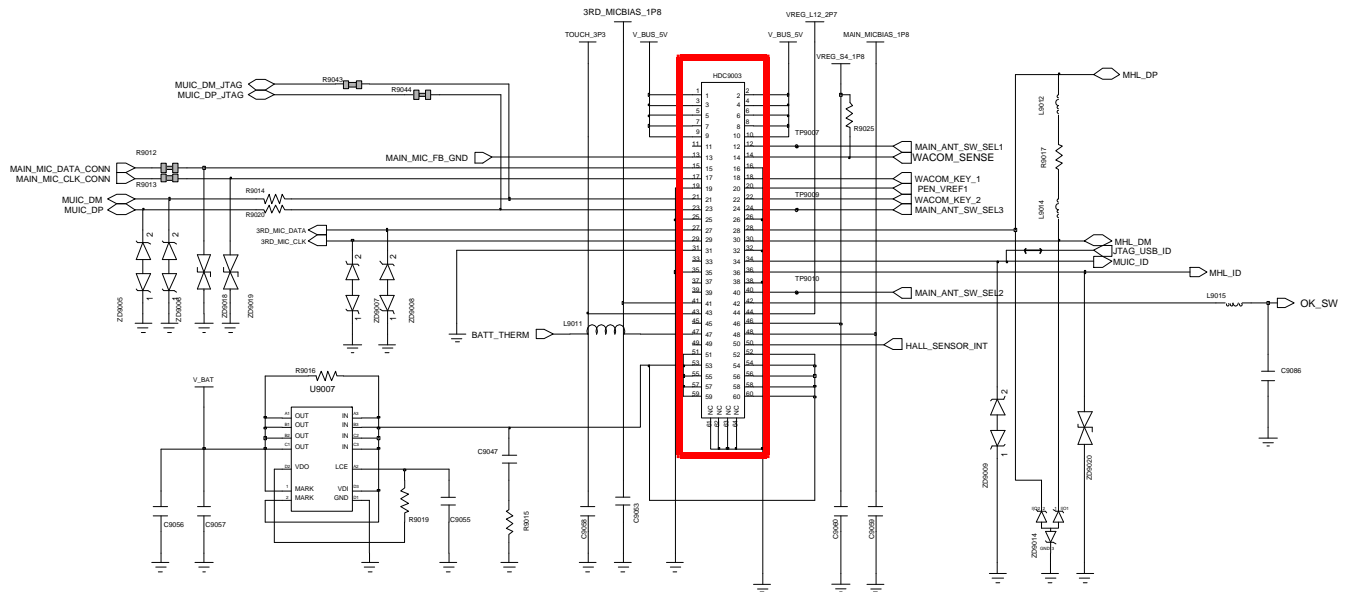
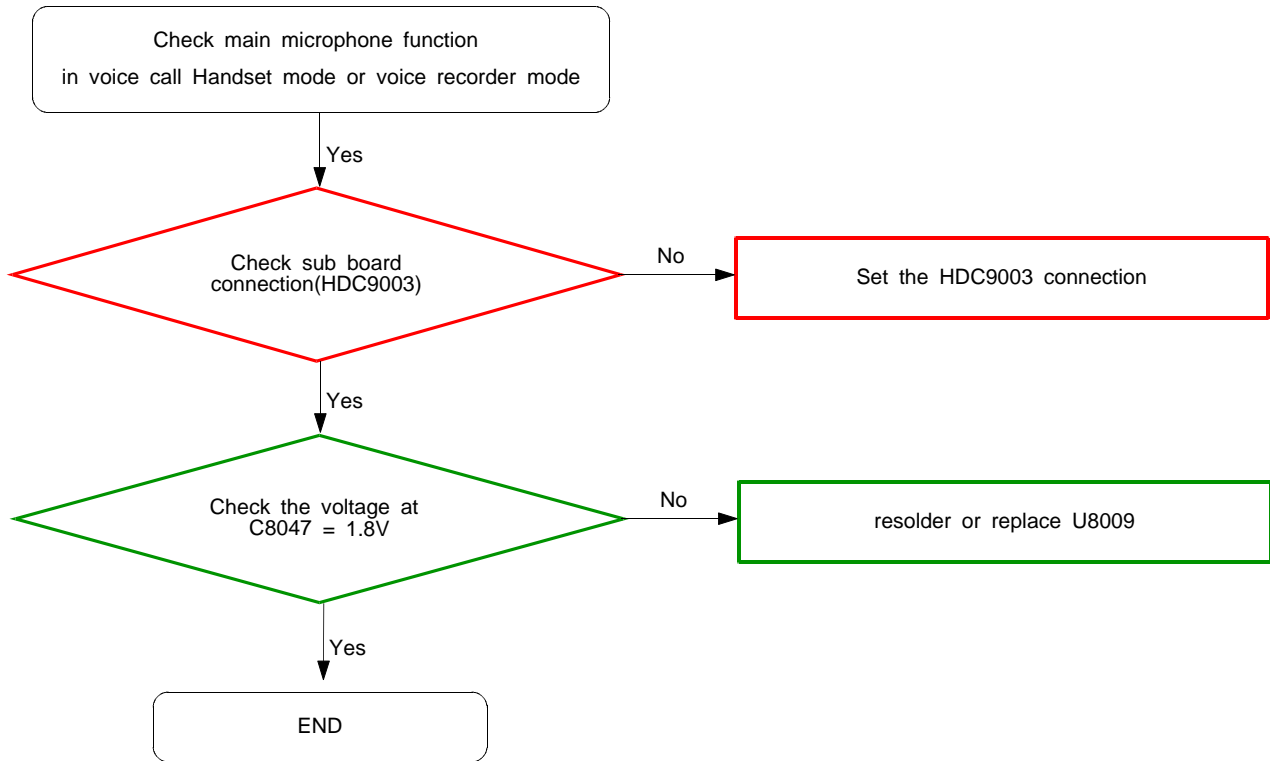
8-3-7. Sensor

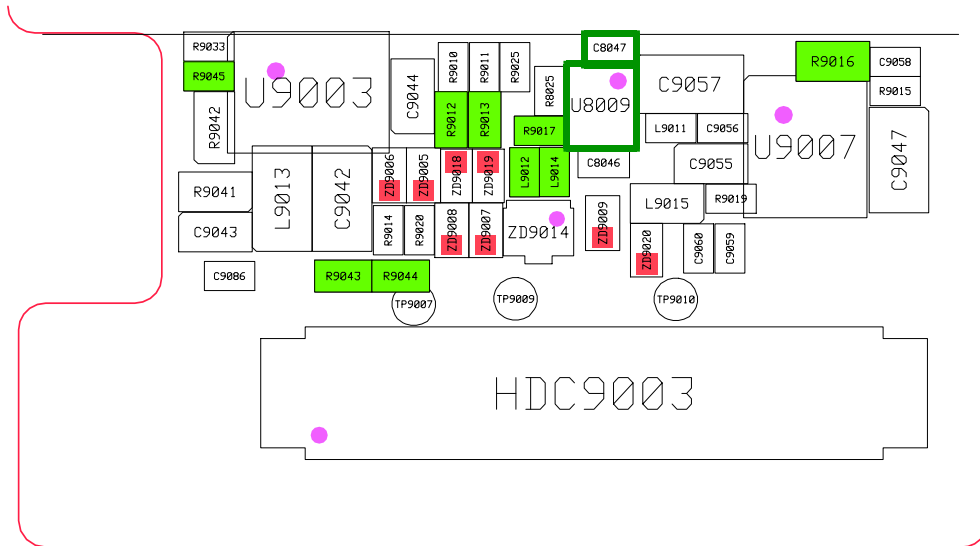
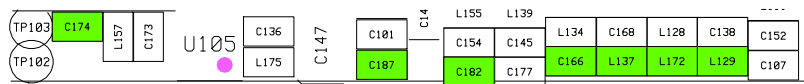
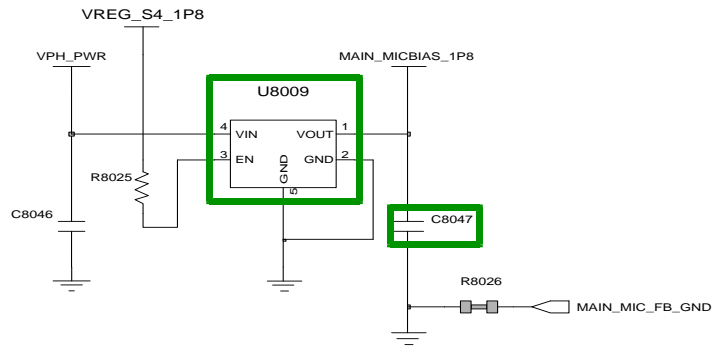




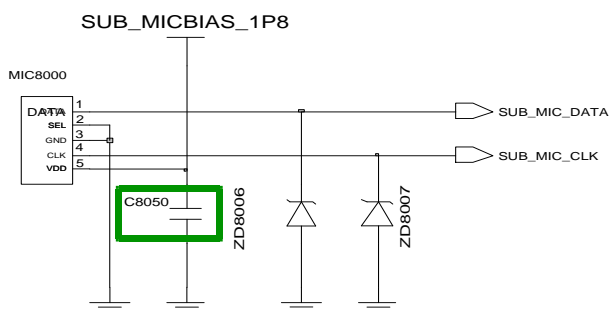
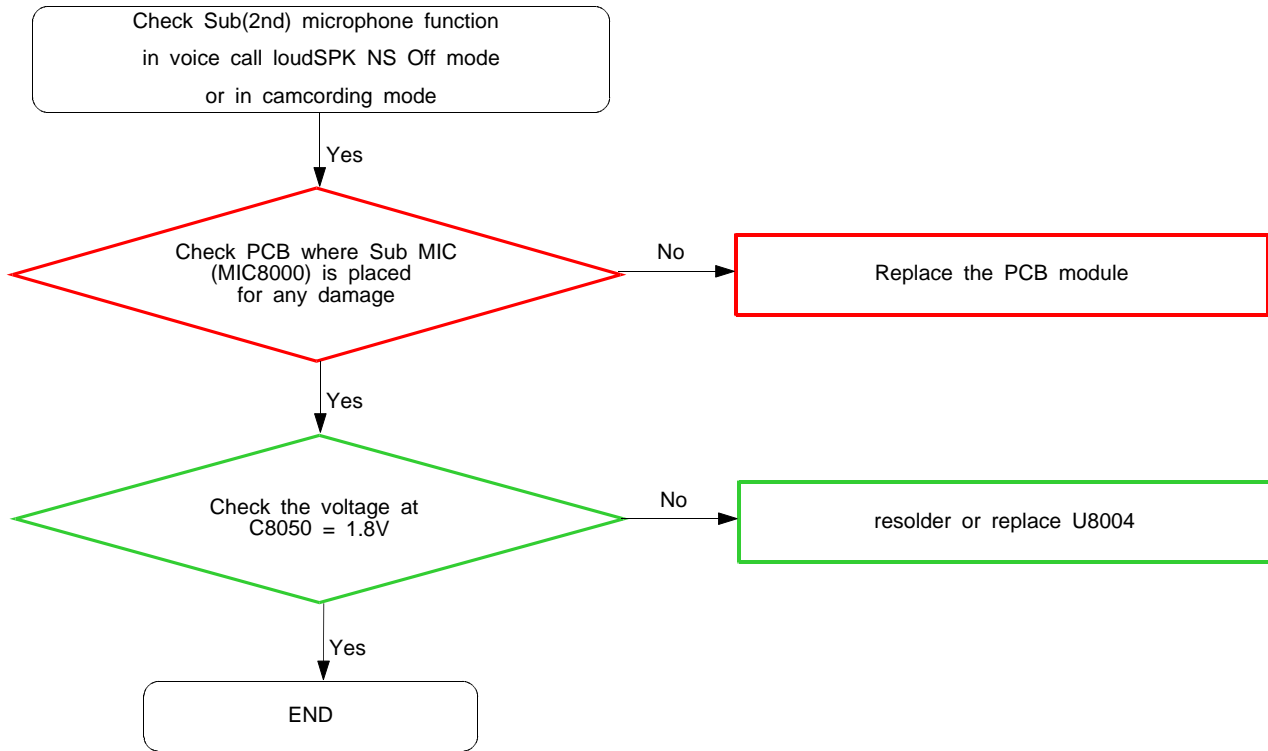


### 8-3-8-1 Microphone Part - Main MIC

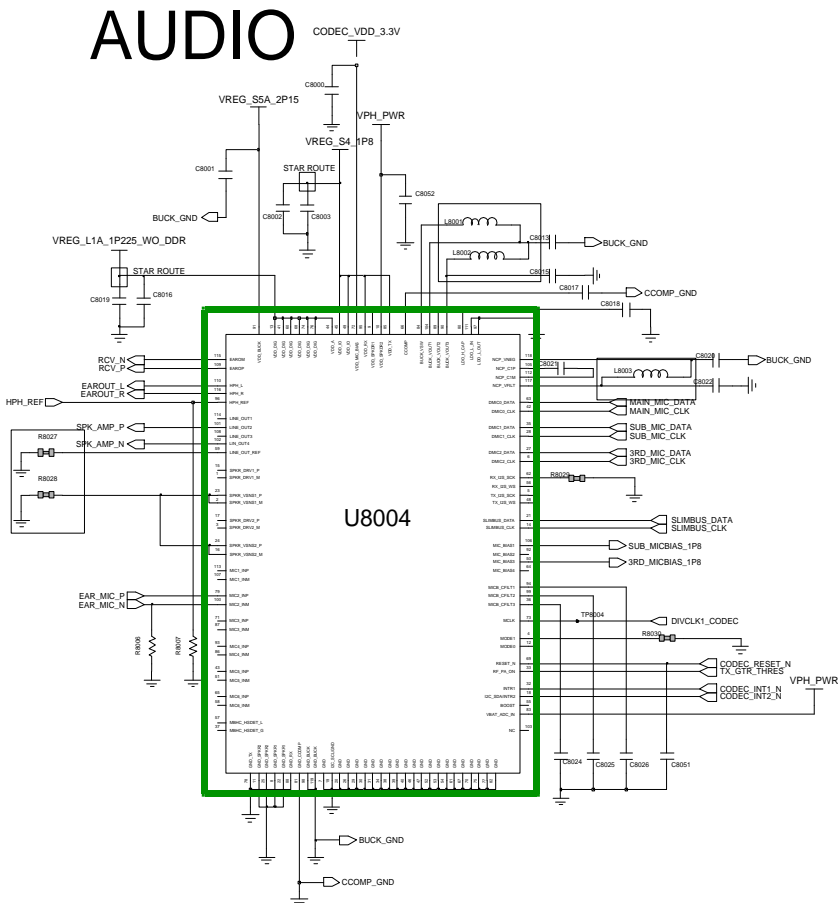




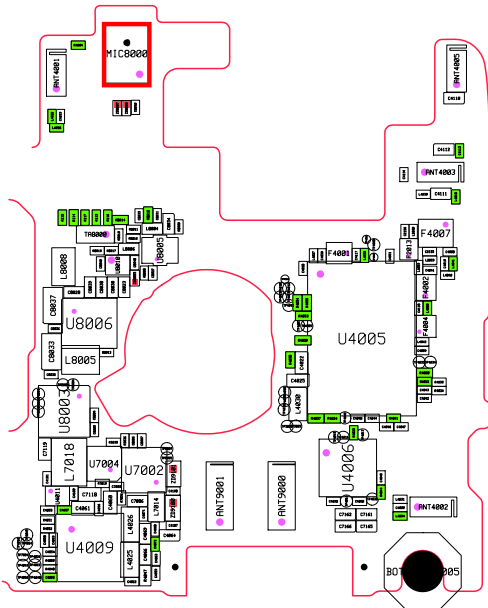
8-3-8-2. Microphone Part - Sub(2nd) MIC



# SUB MIC

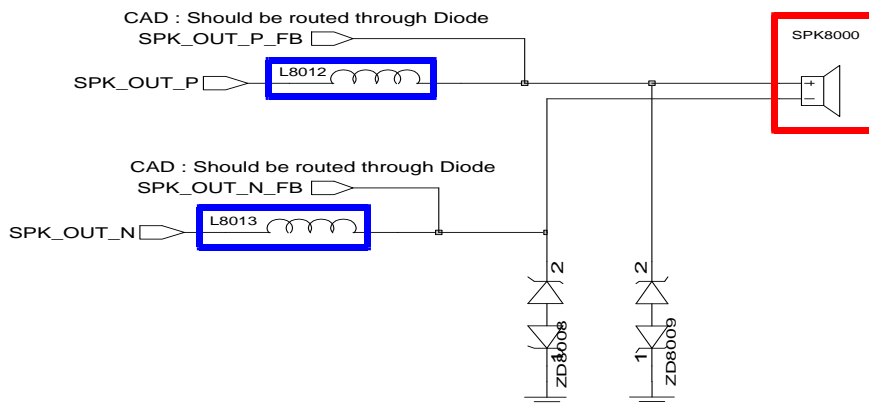
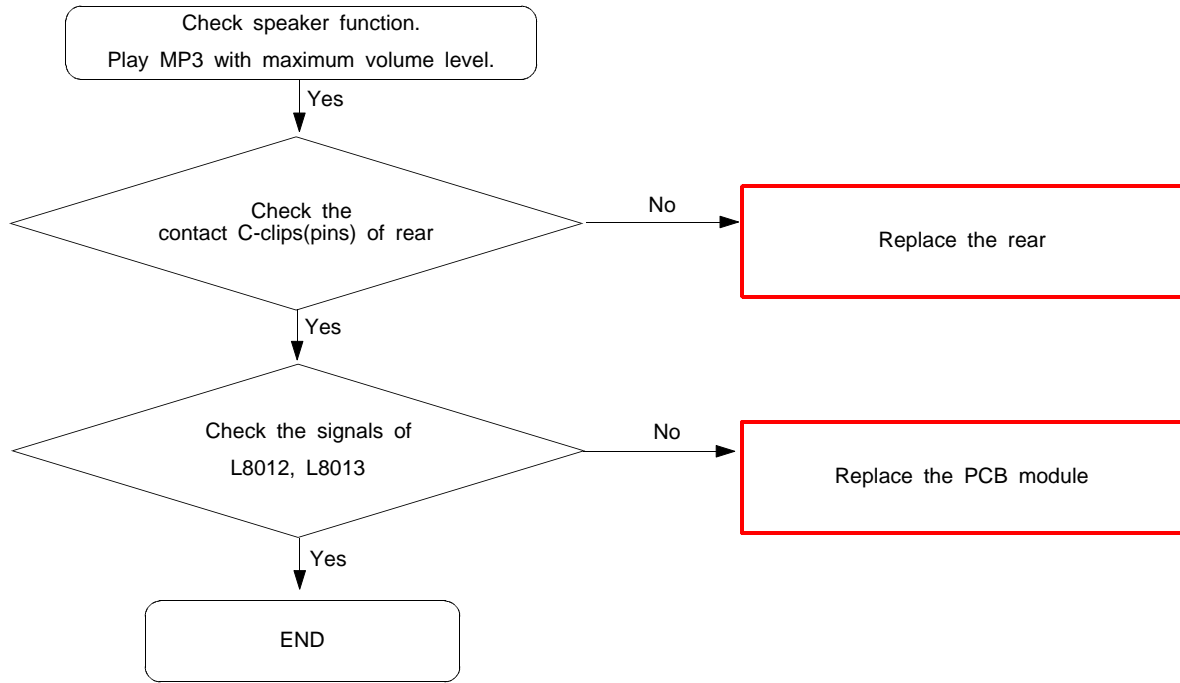


Audio Codec





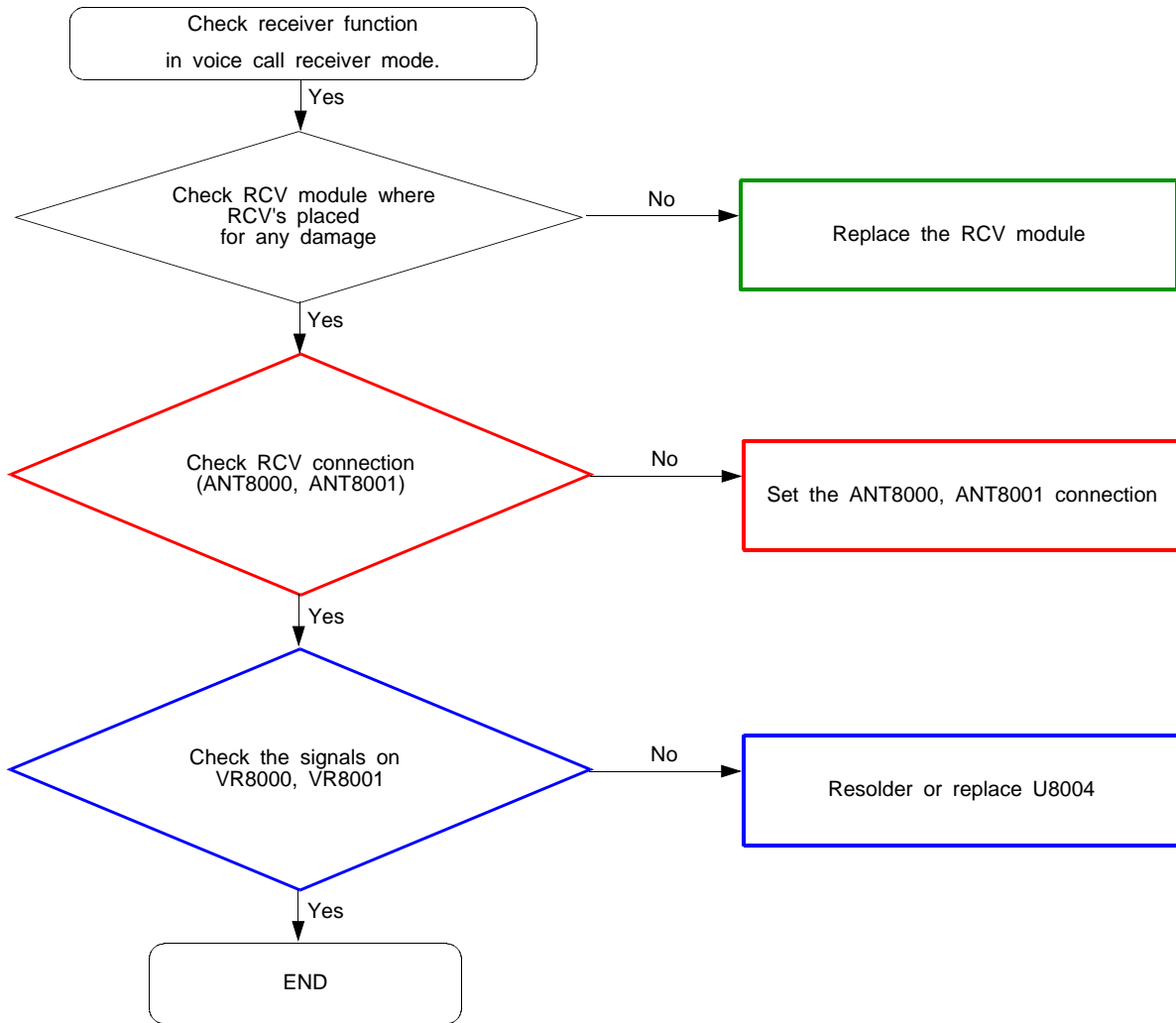
8-3-9. Speaker Part

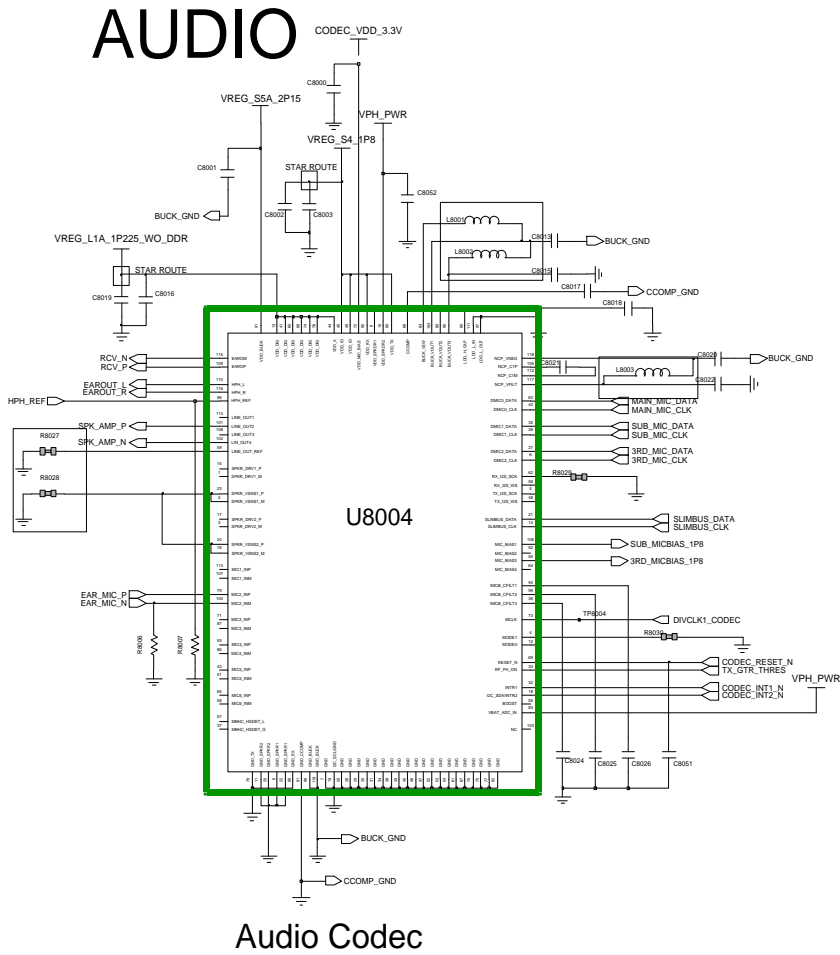
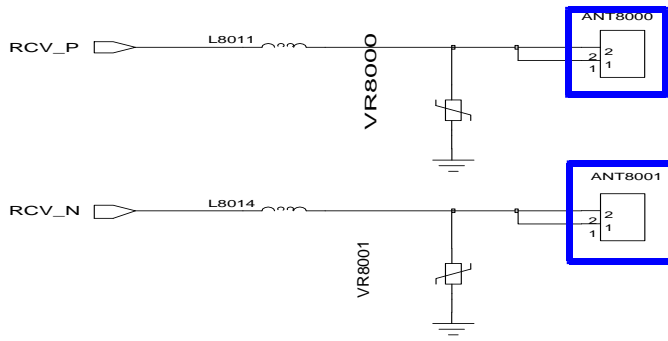






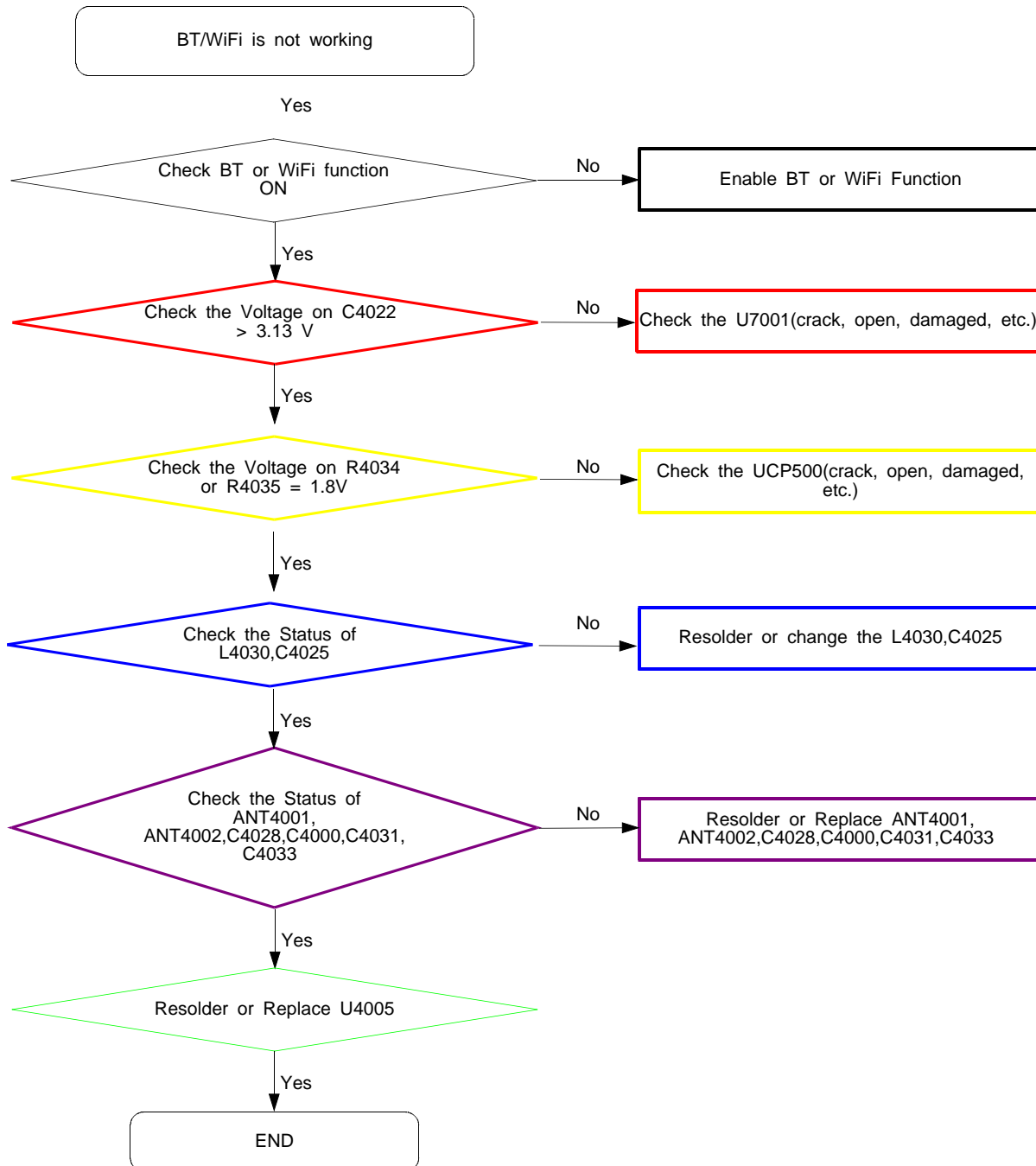
### 8-3-10. Receiver Part

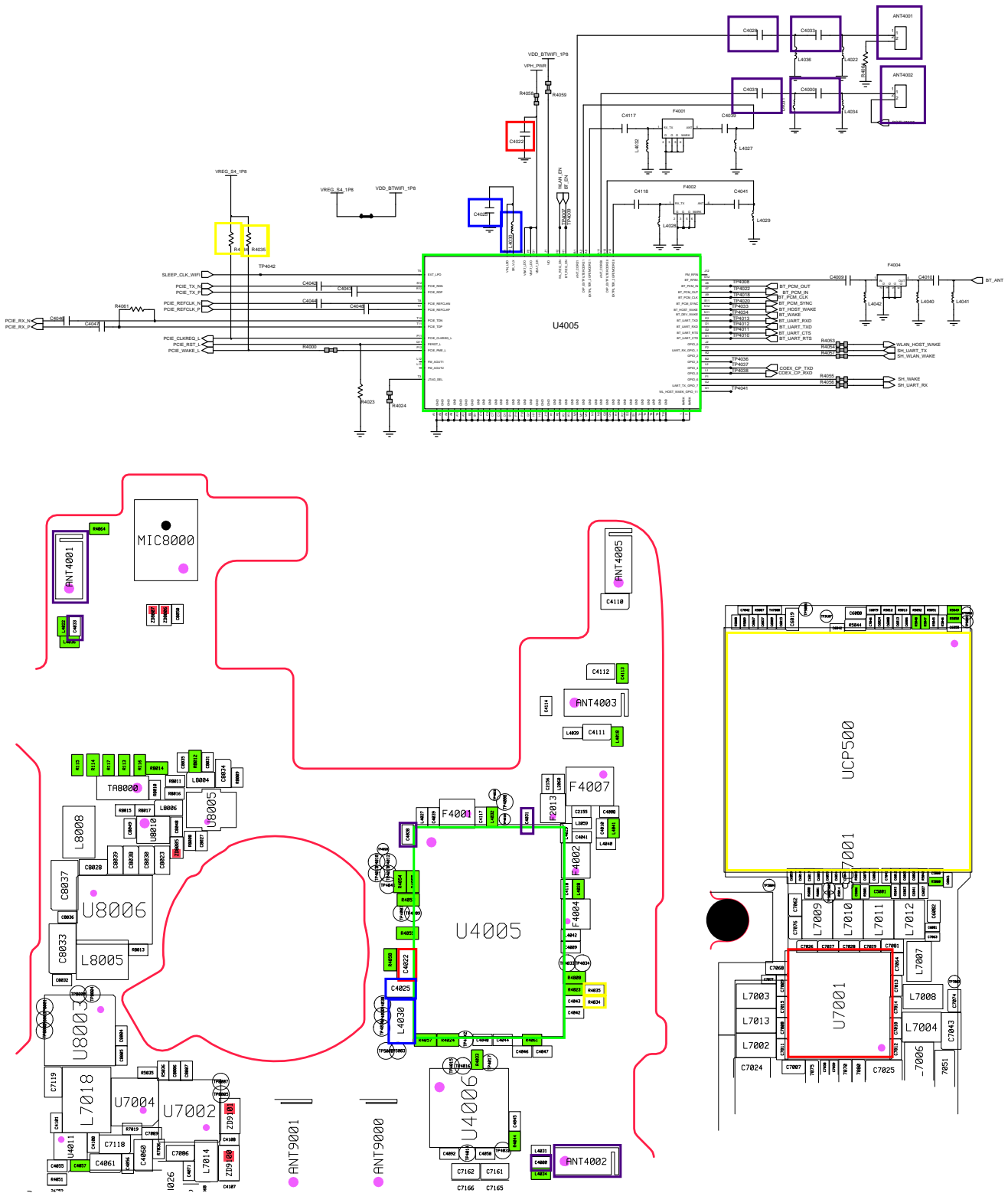




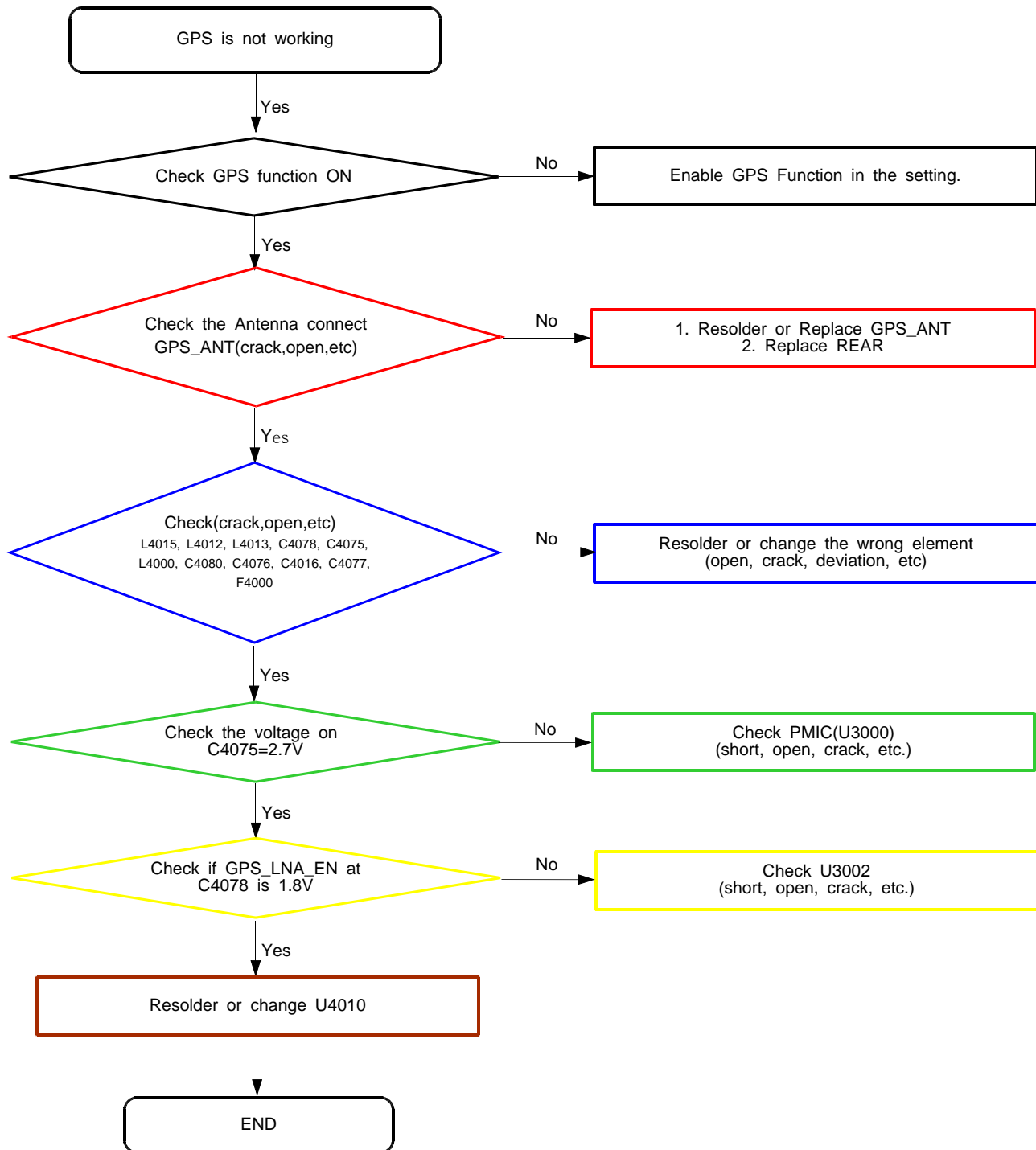


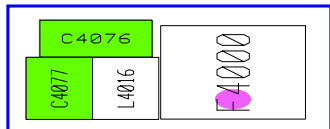
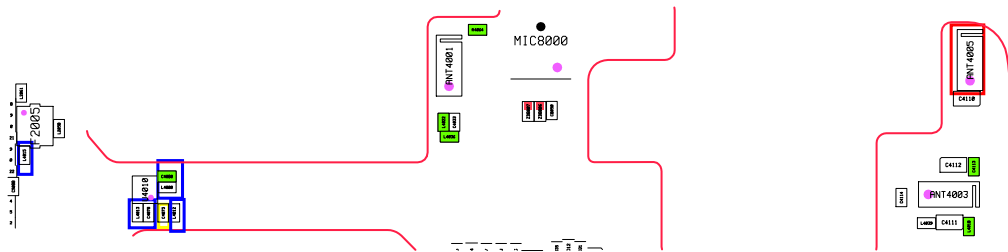
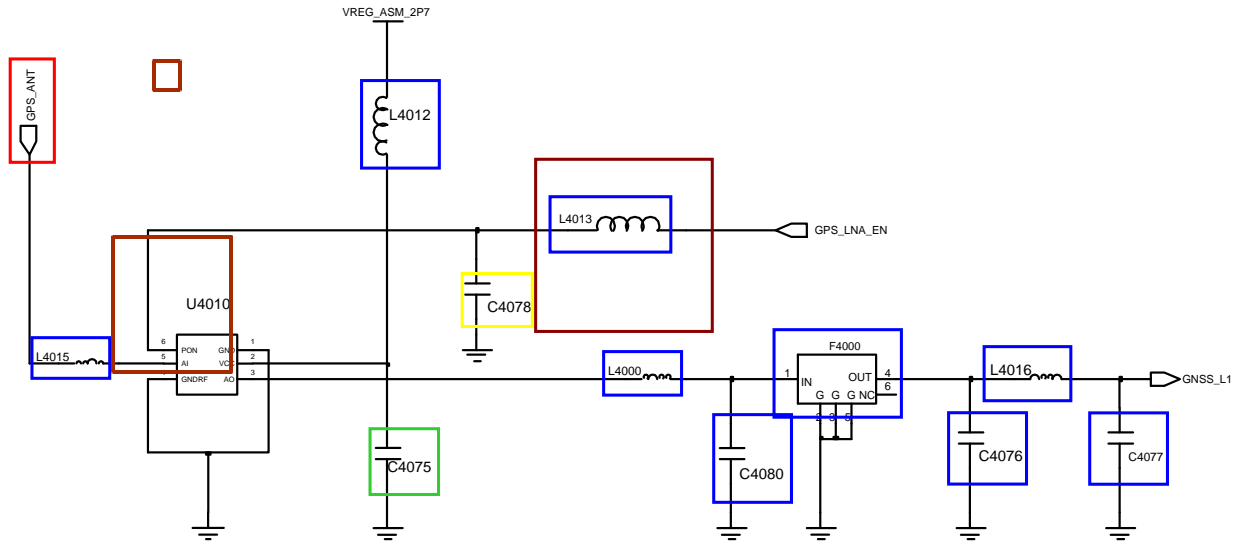
8-3-11. BT/WIFI



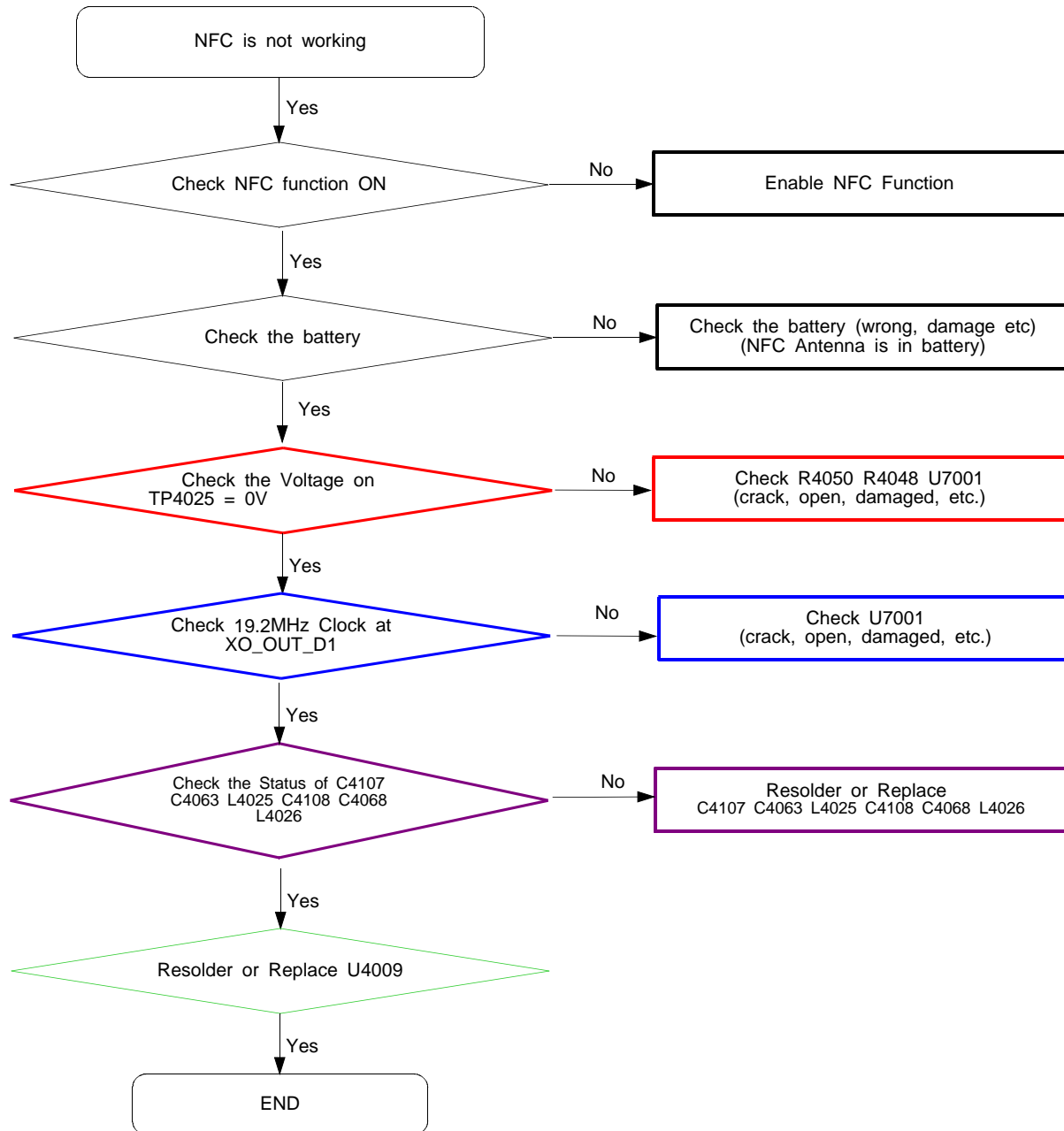


8-3-12. GPS





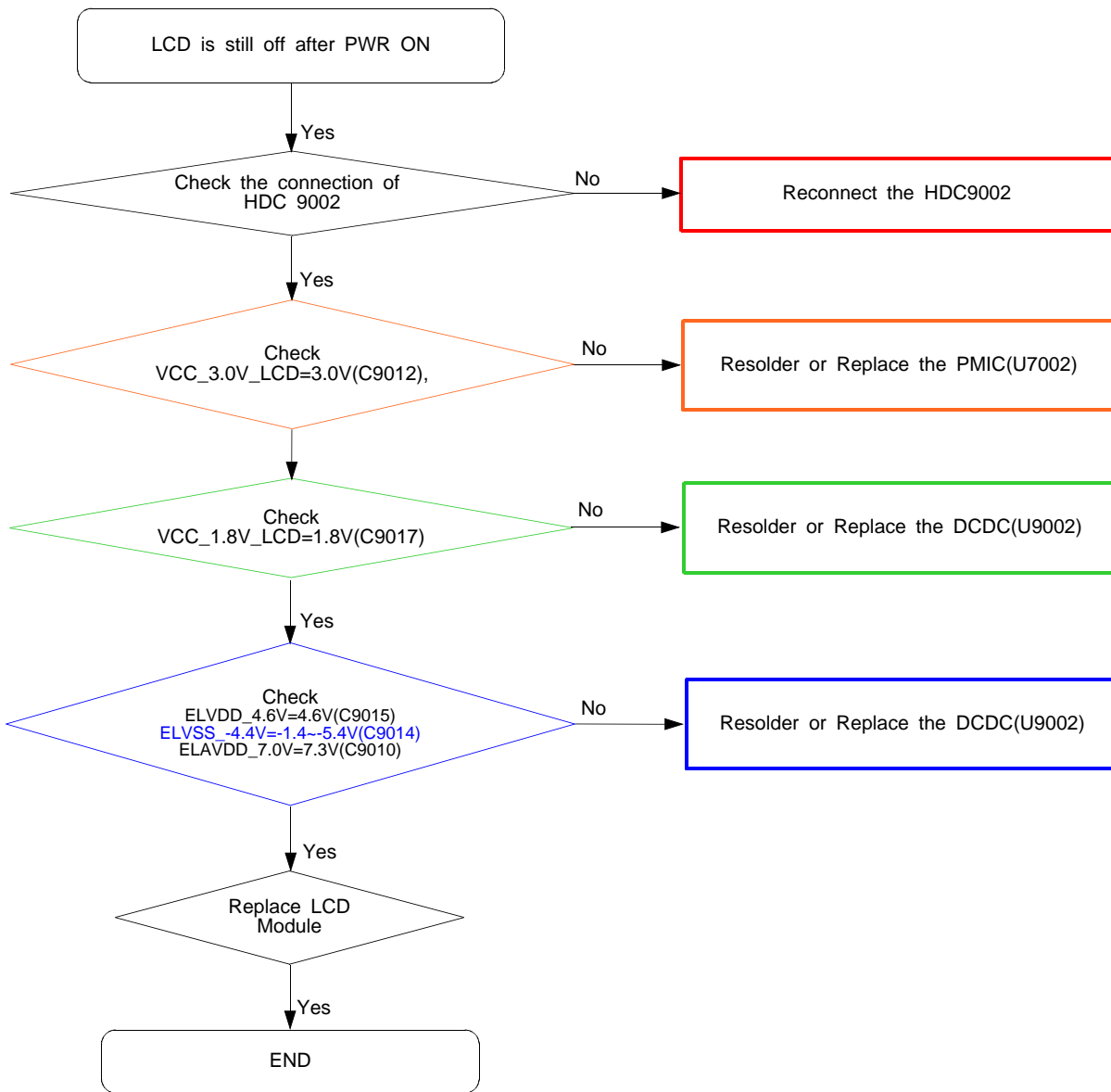
8-3-13. NFC



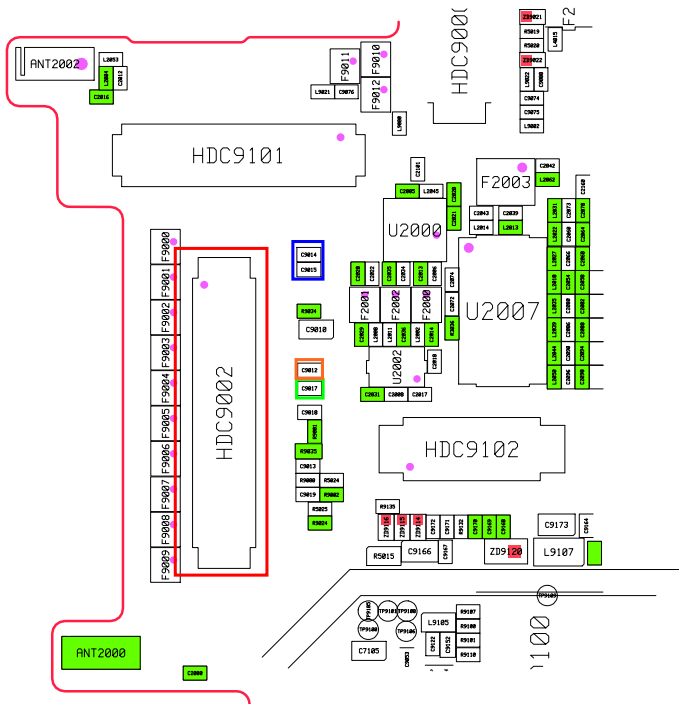




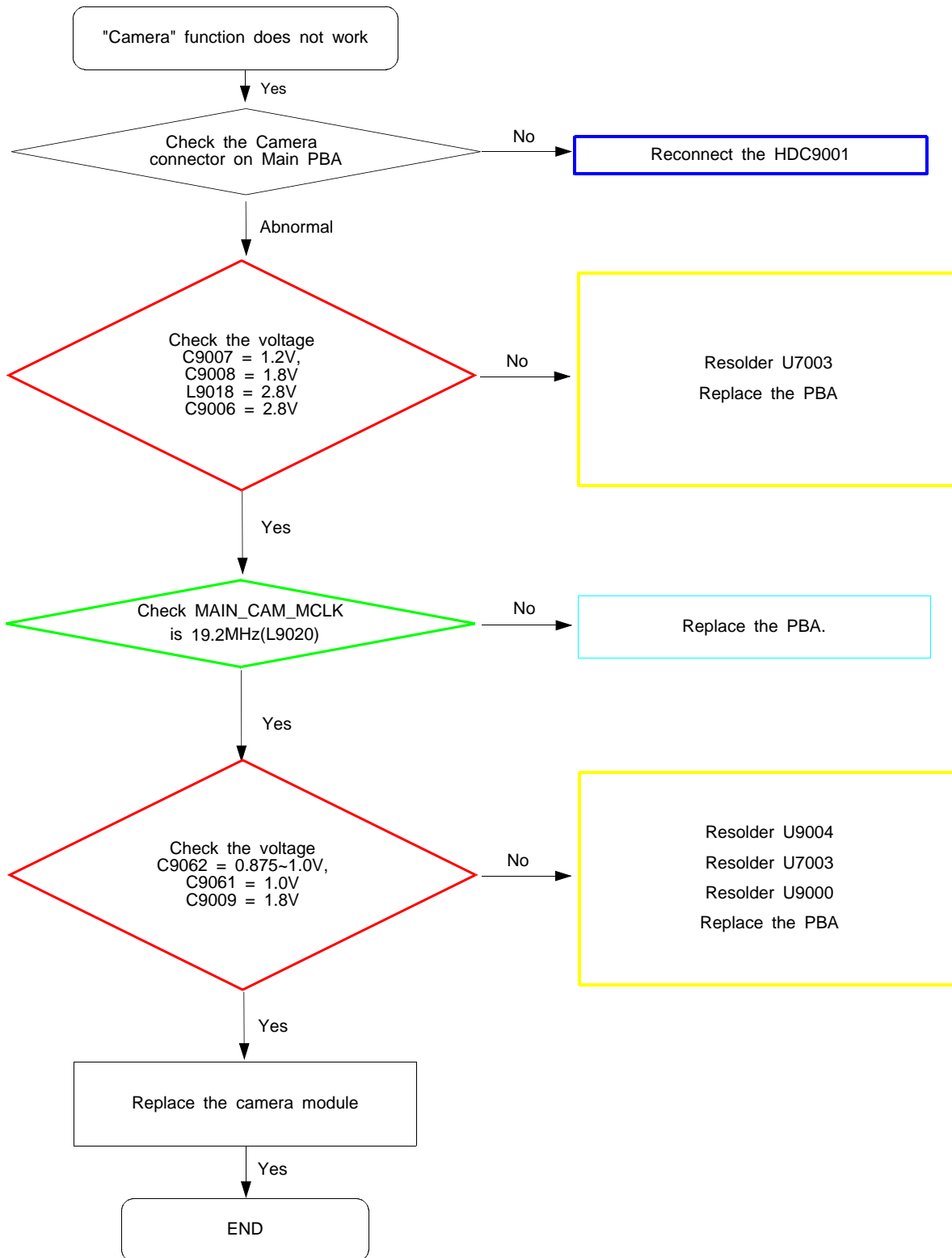
8-3-14. LCD





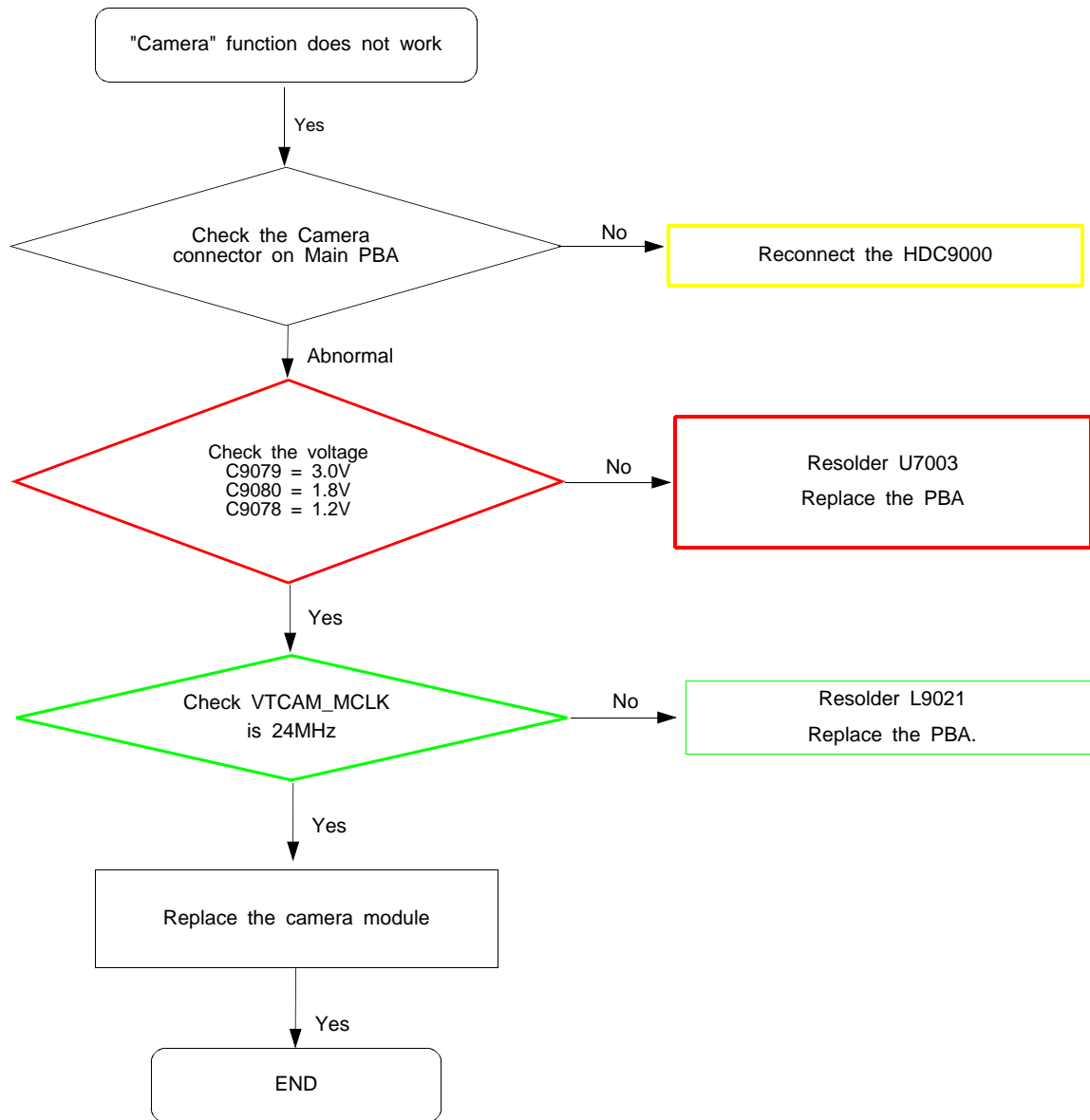


8-3-15. 16M CAM





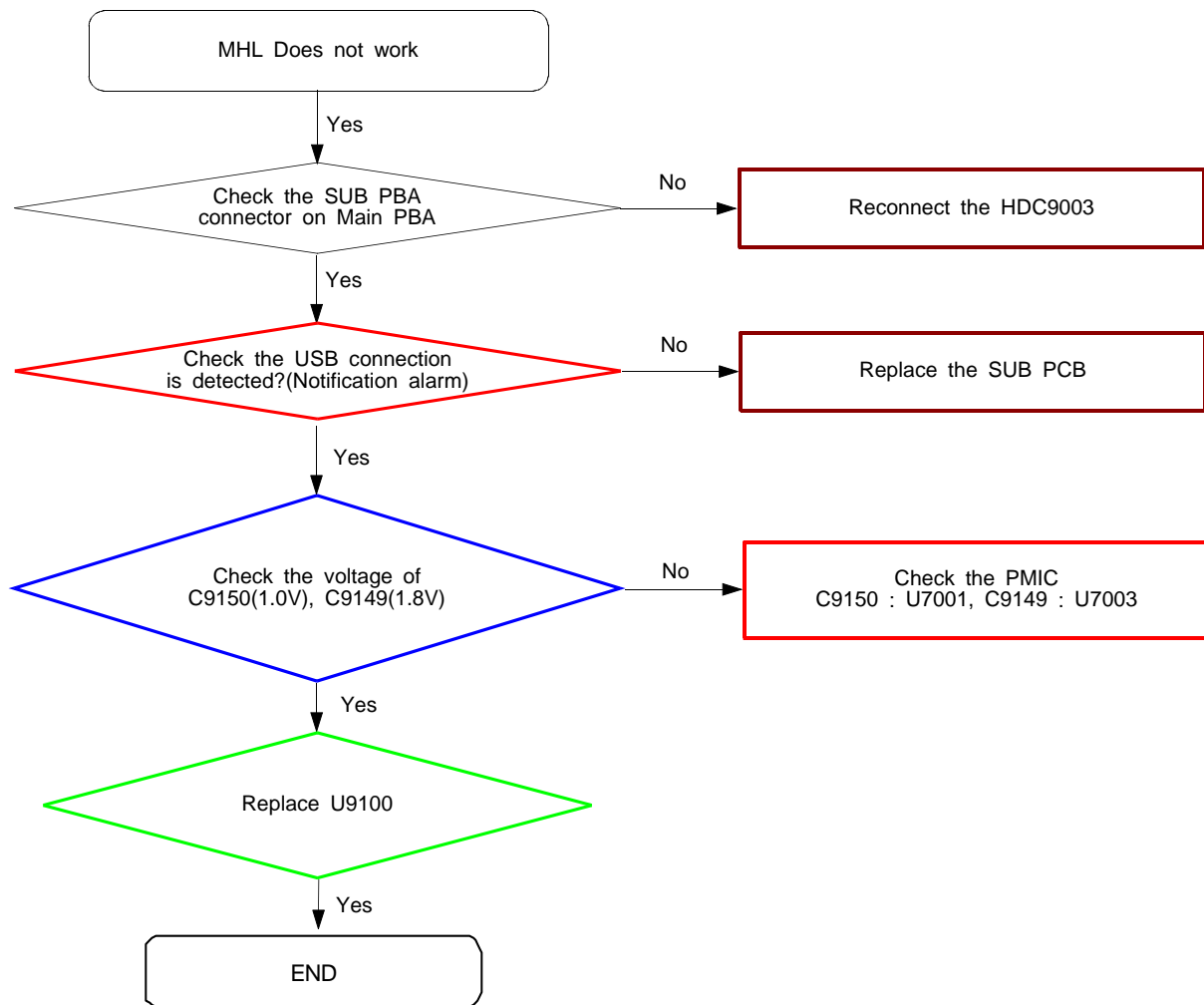
8-3-16. VT CAM

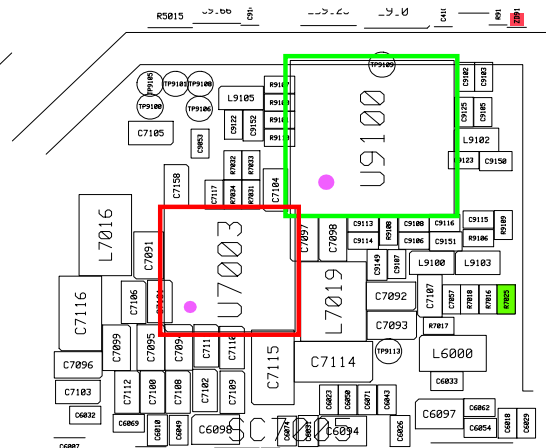
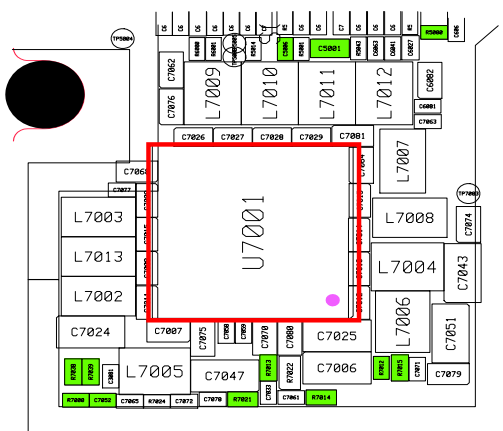
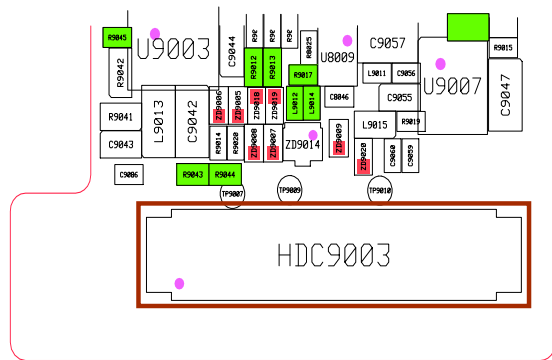
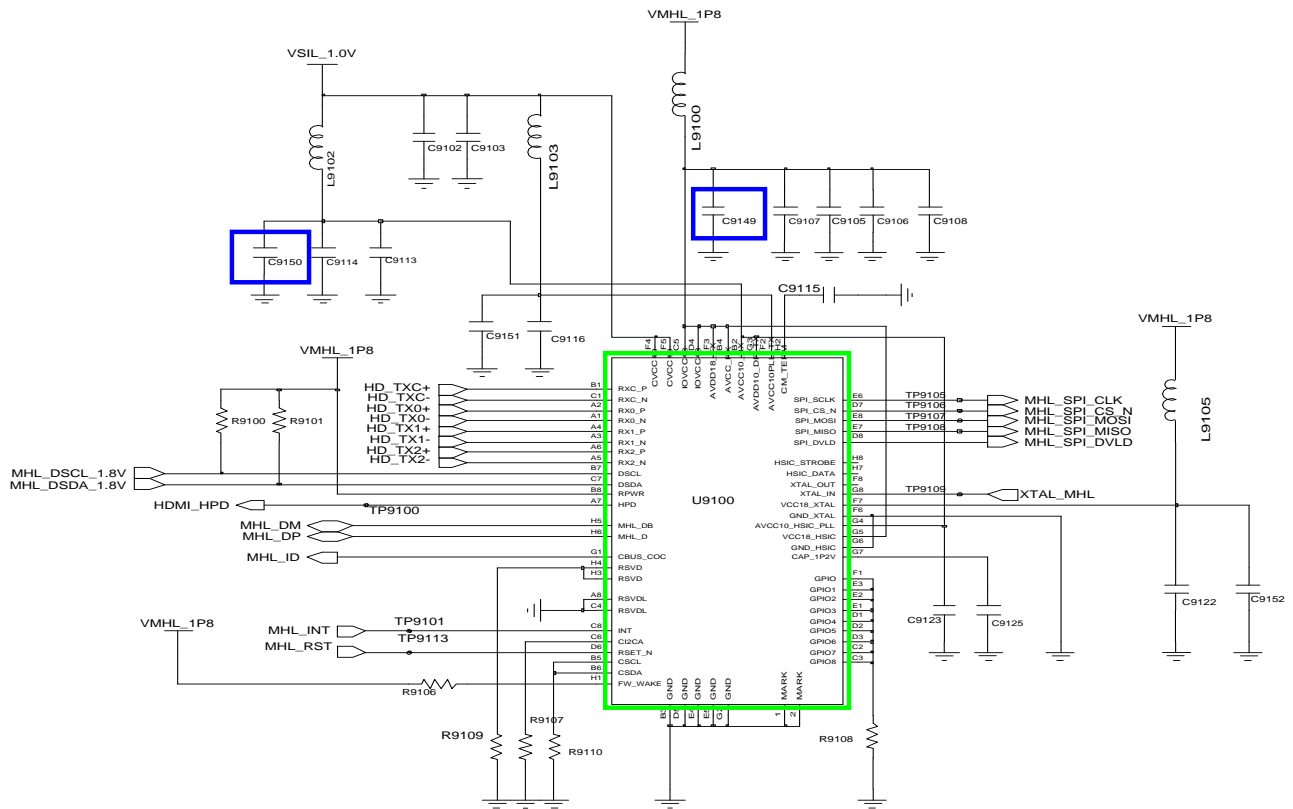




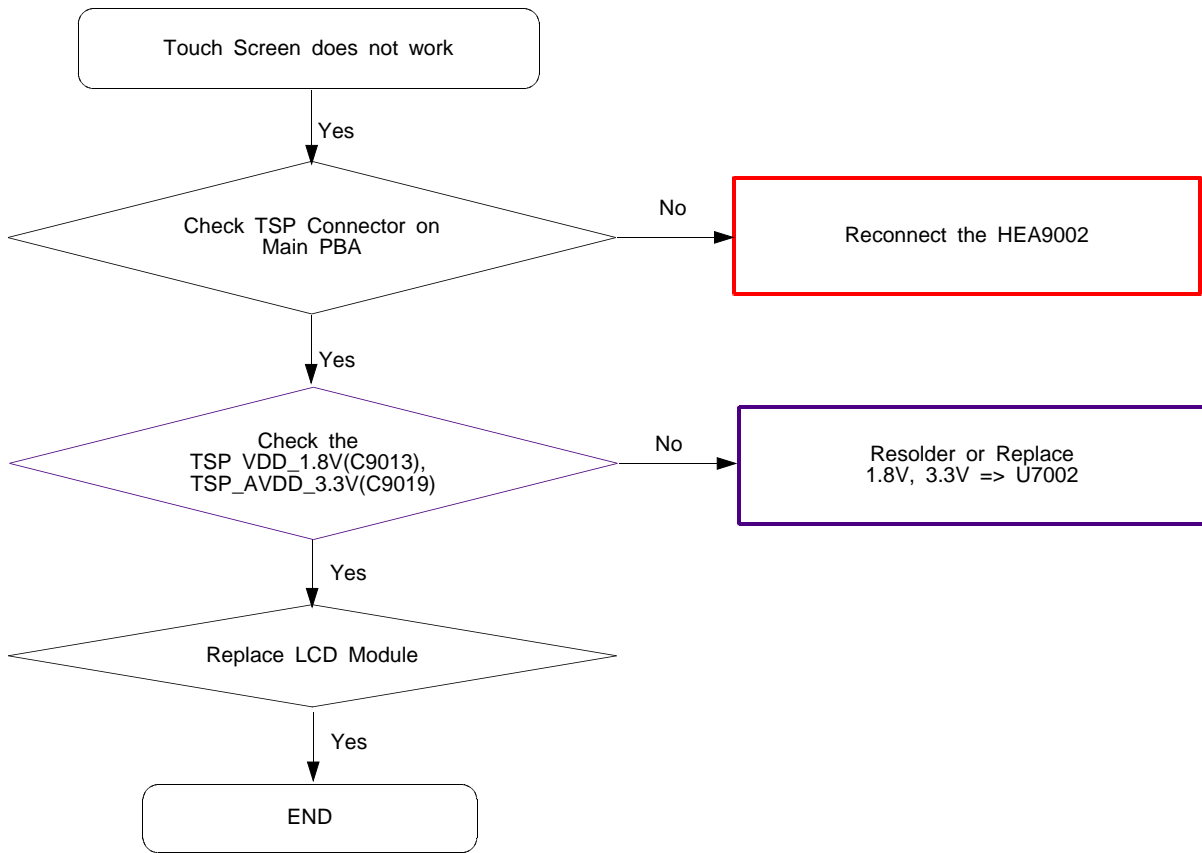


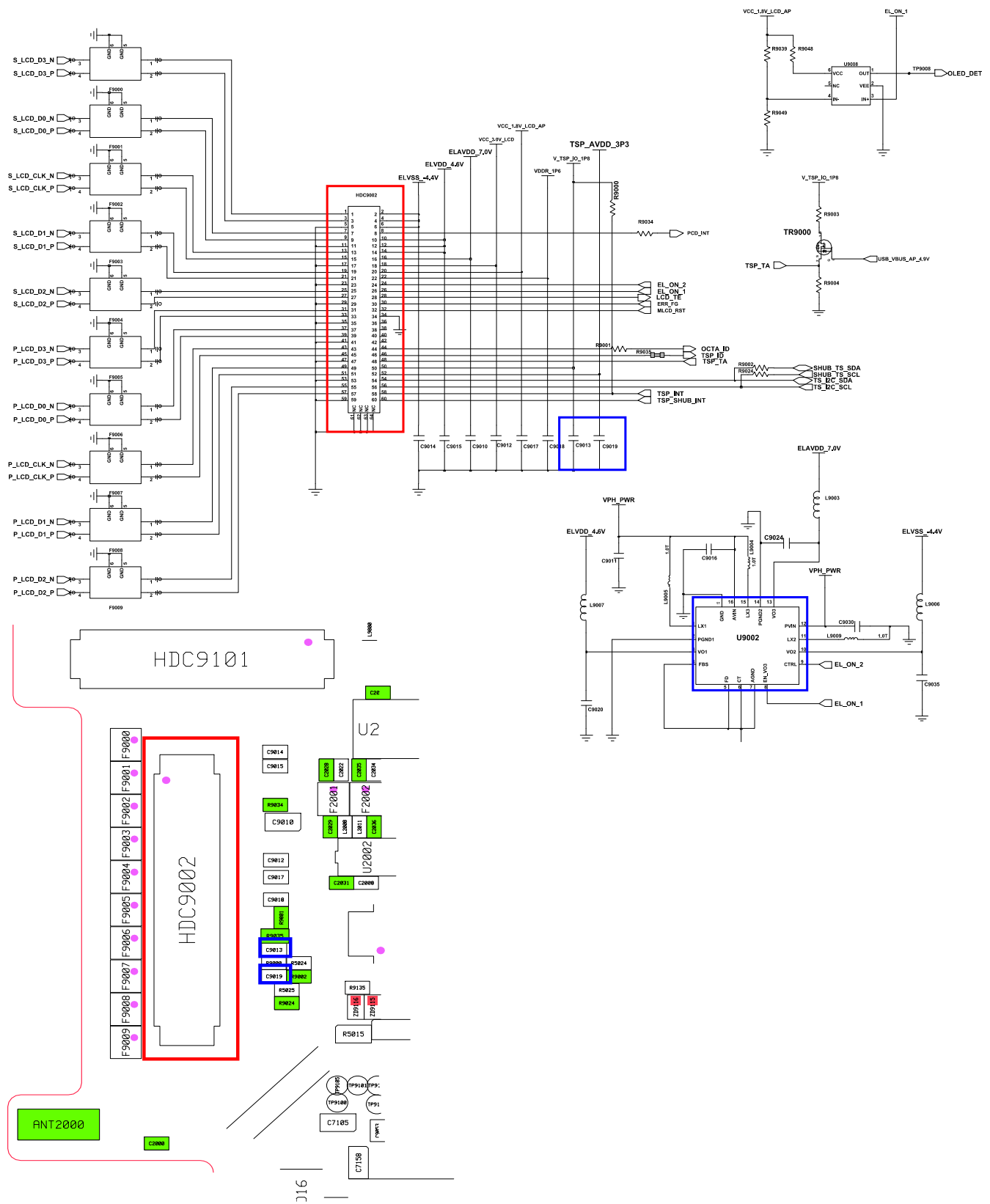
8-3-17. MHL



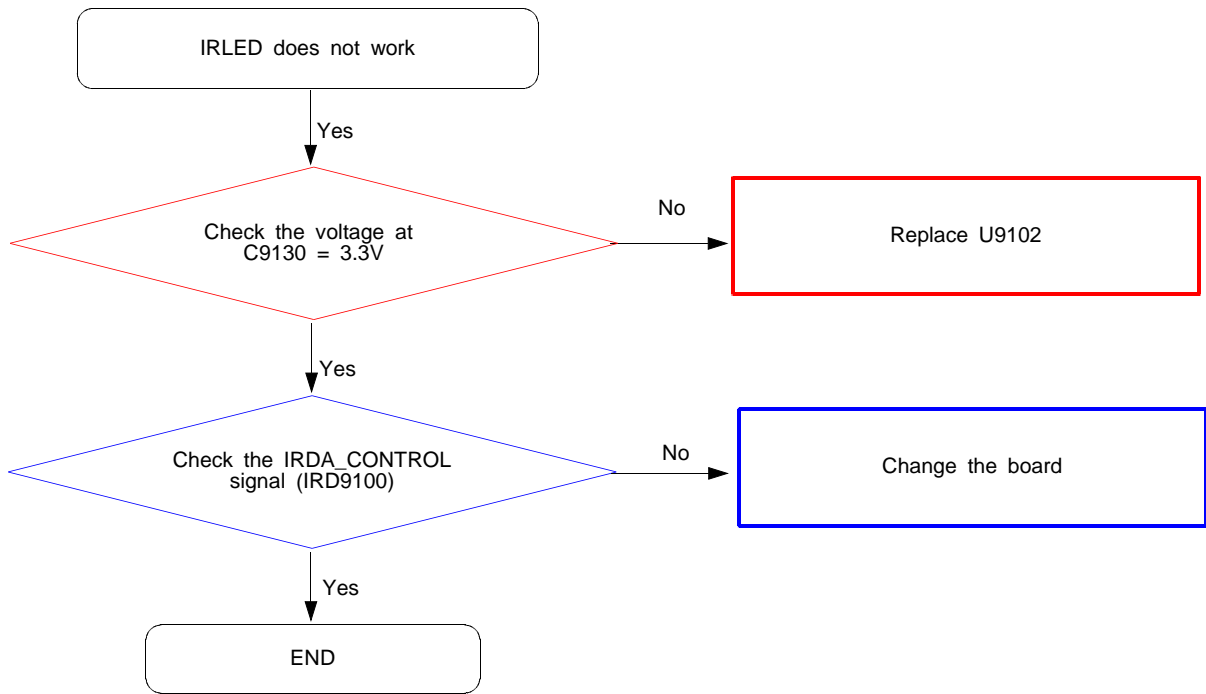


8-3-18. TSP



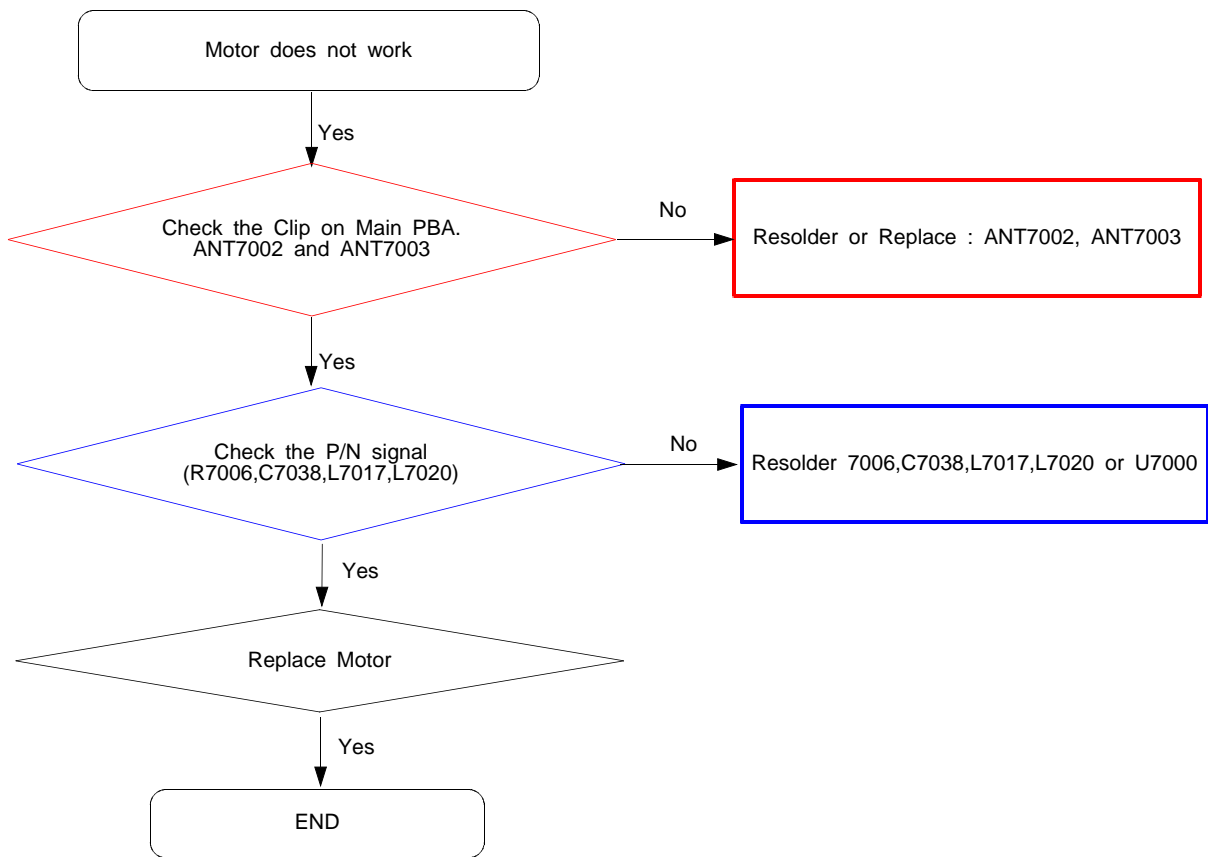


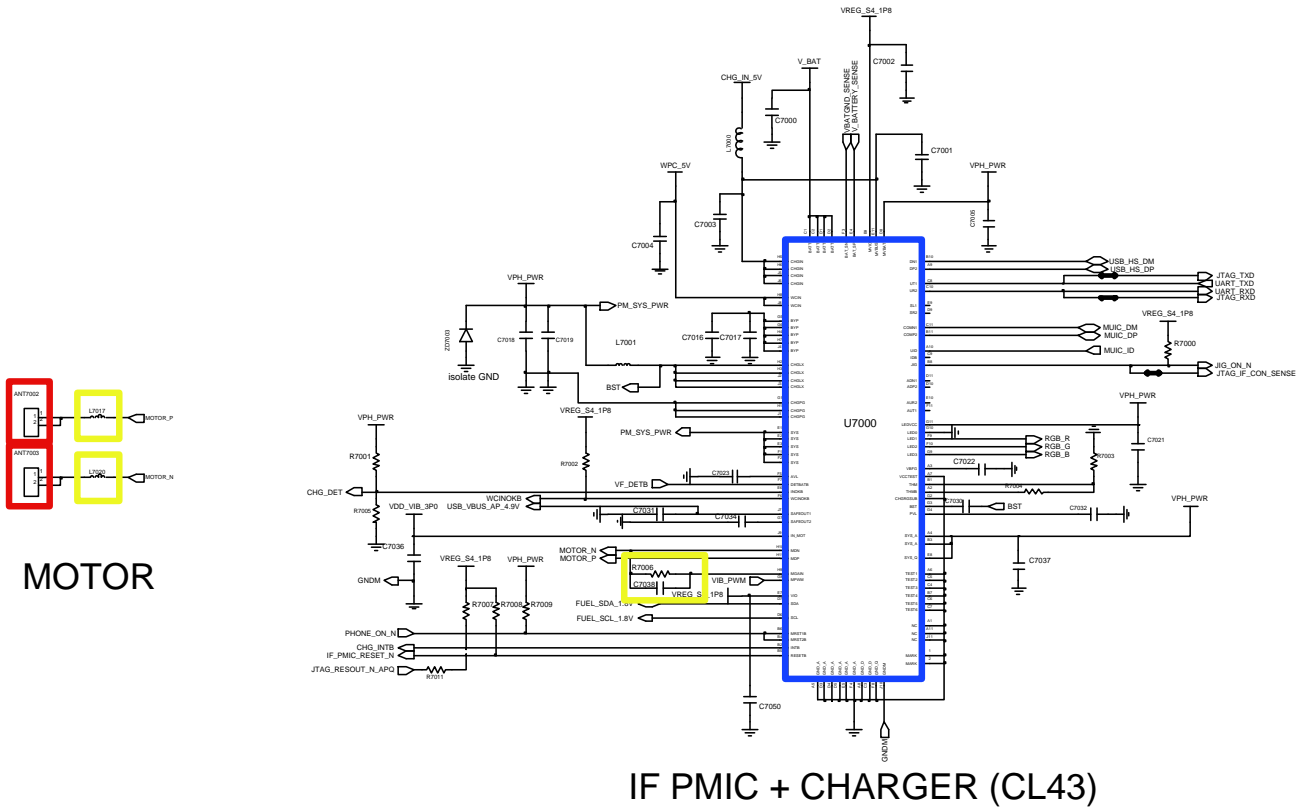
8-3-19. IRLED





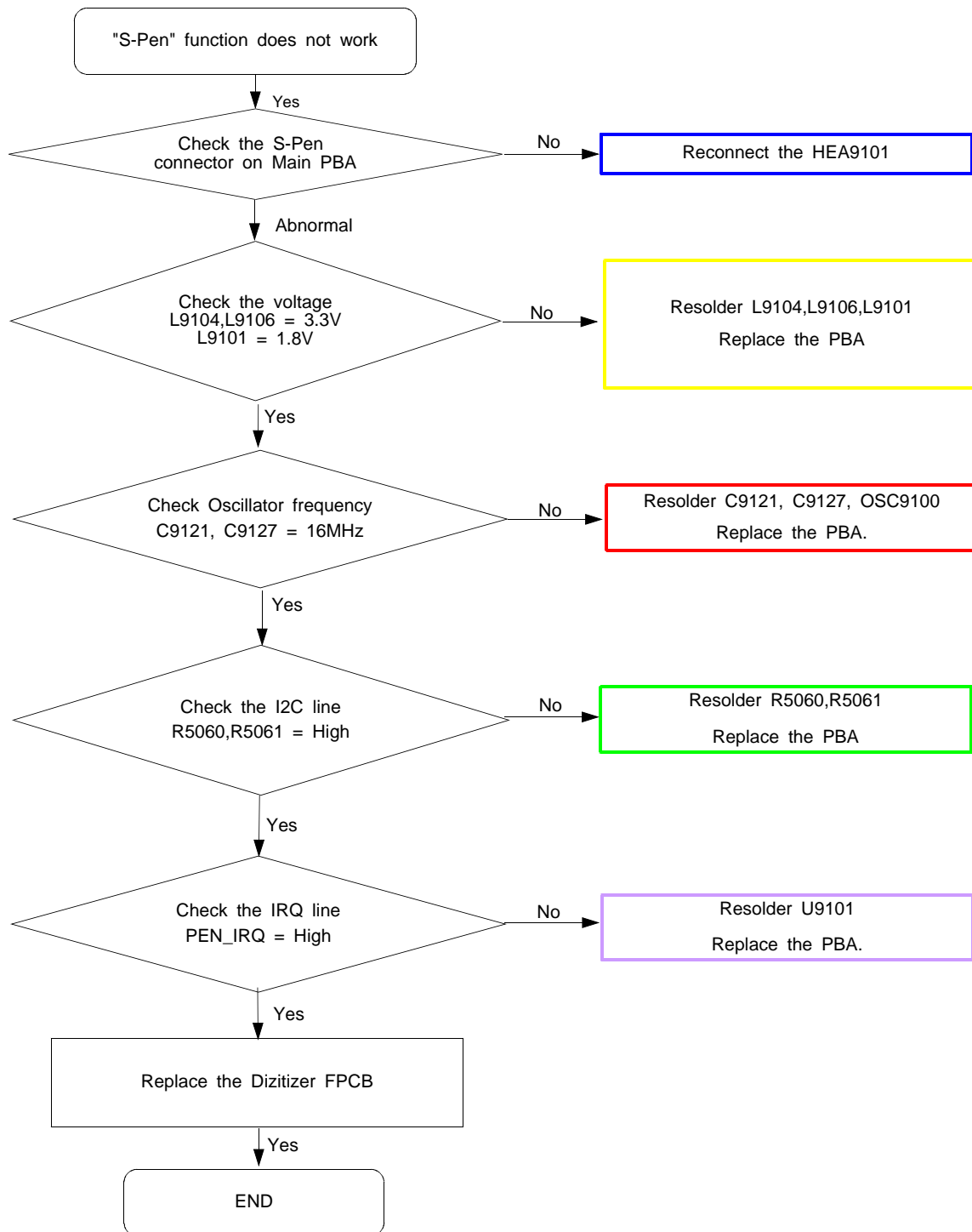
8-3-20. Motor

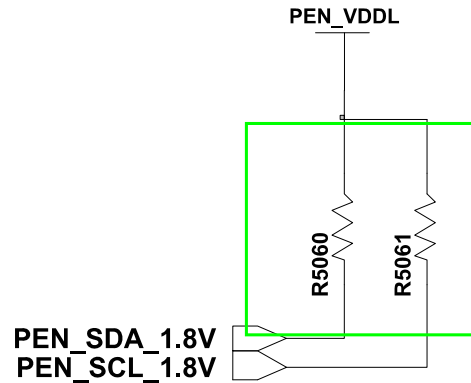
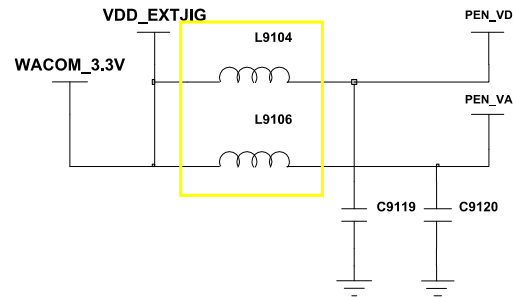
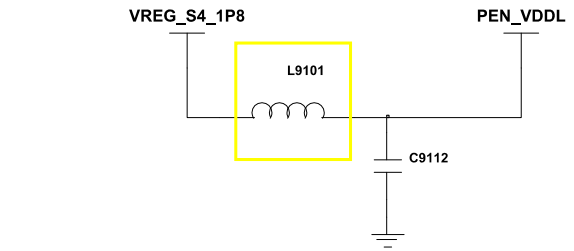
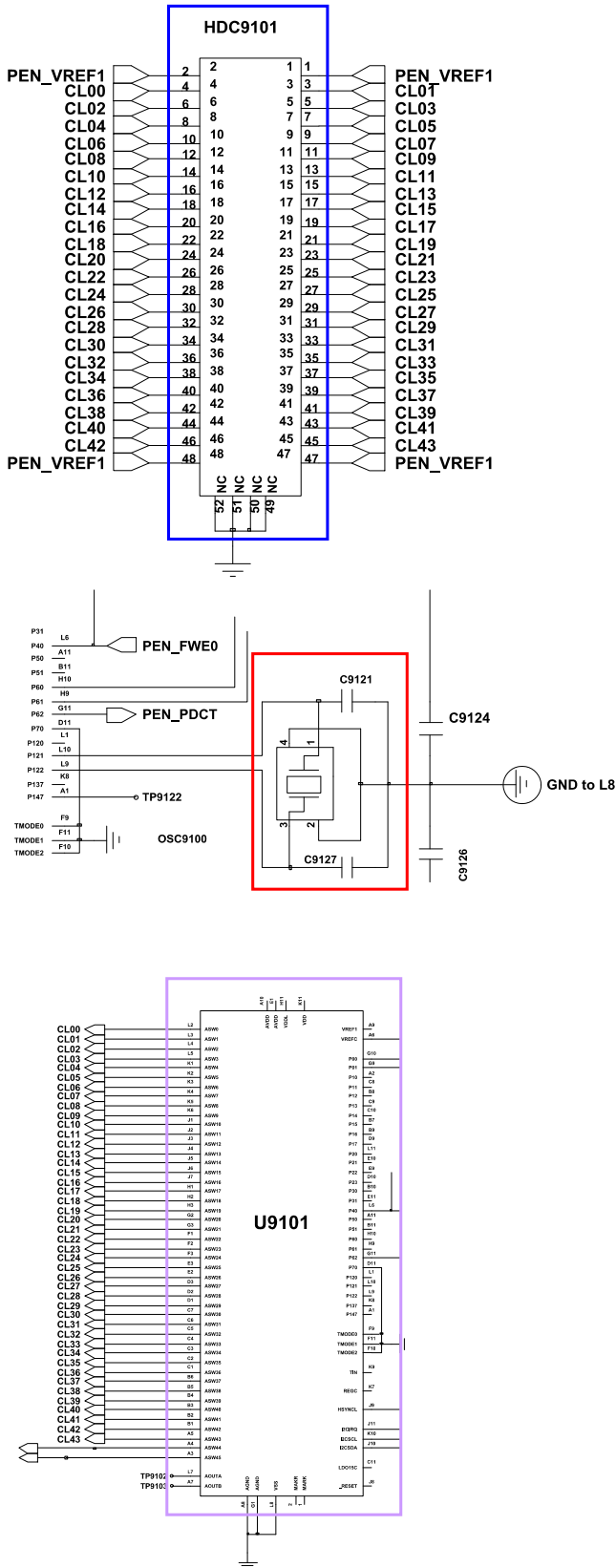






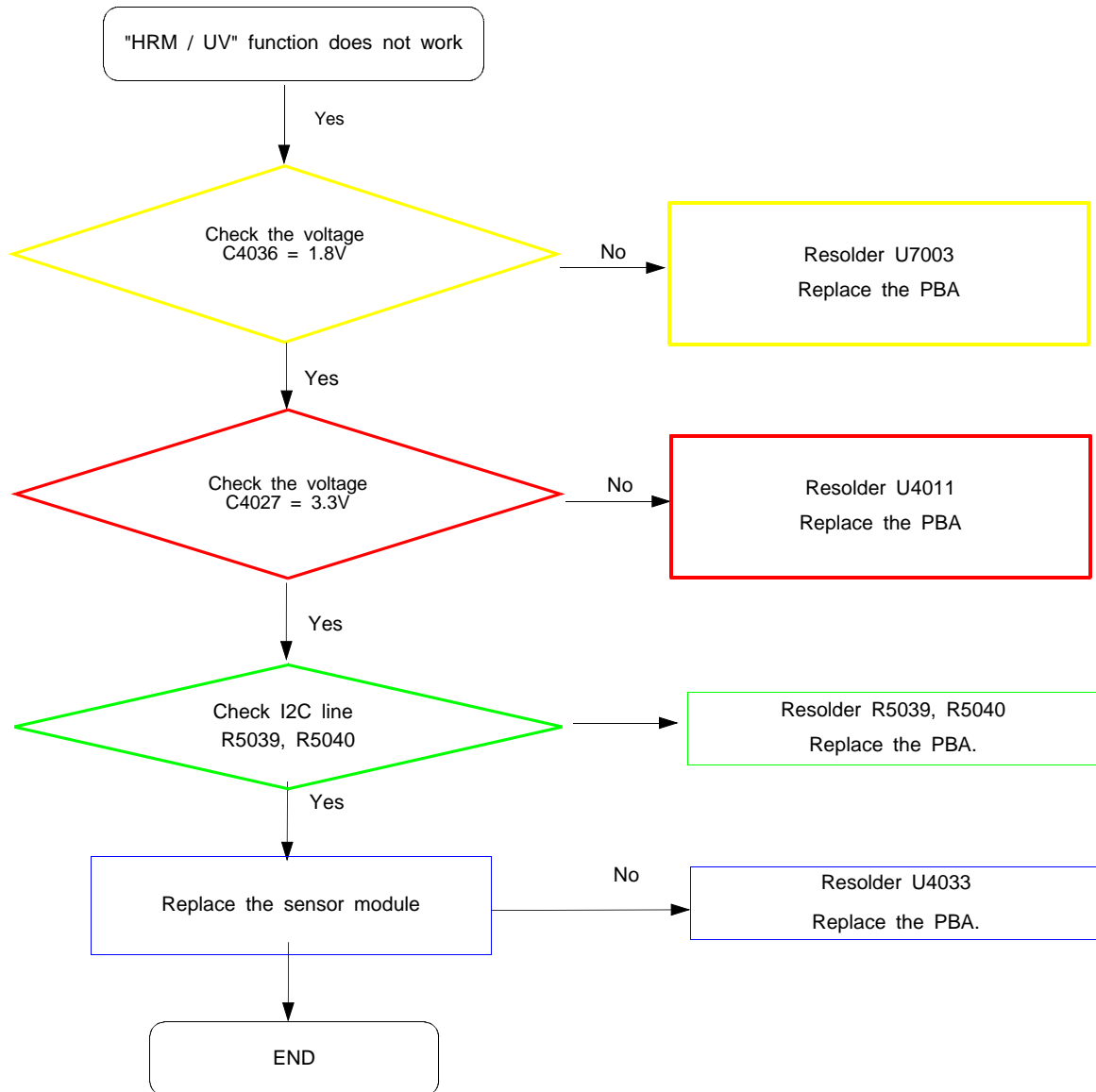
8-3-21. S-pen

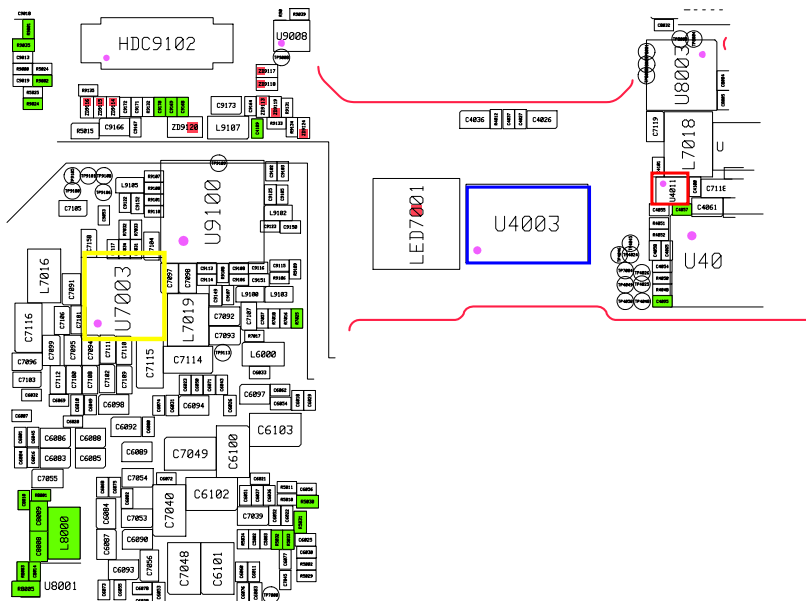
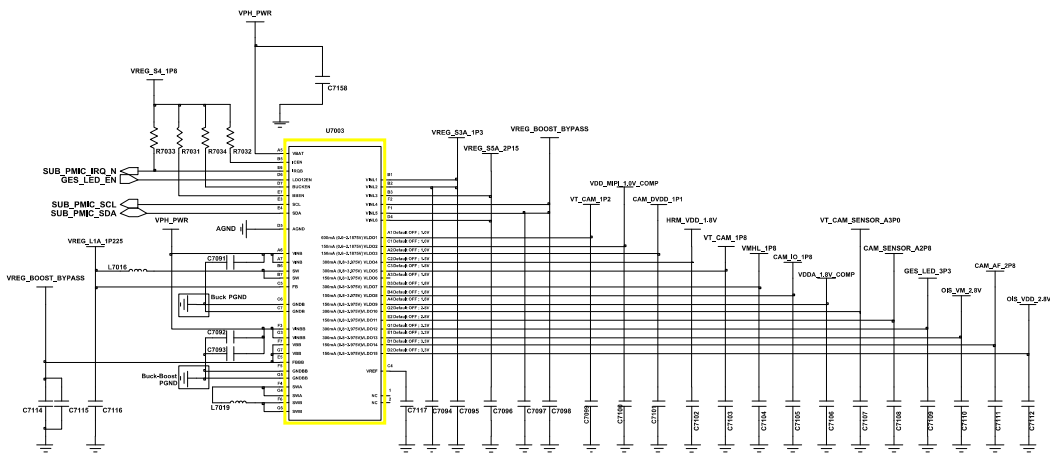
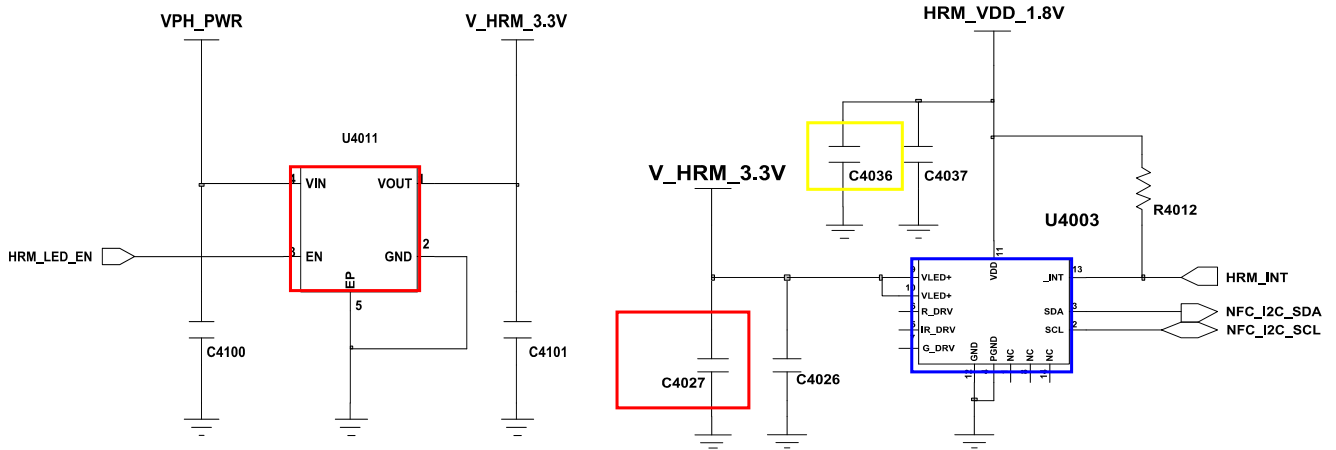




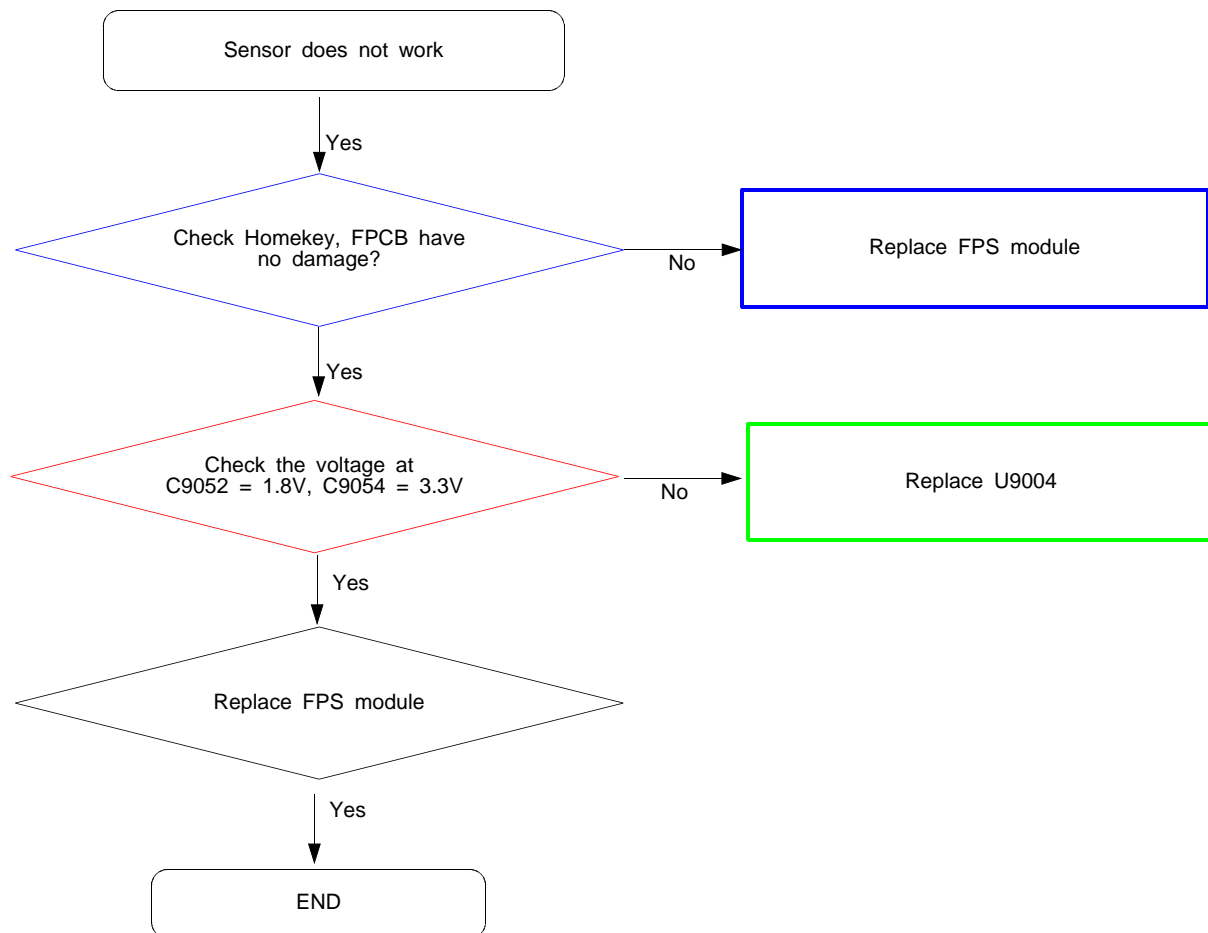


8-3-22. HRM / UV Sensor

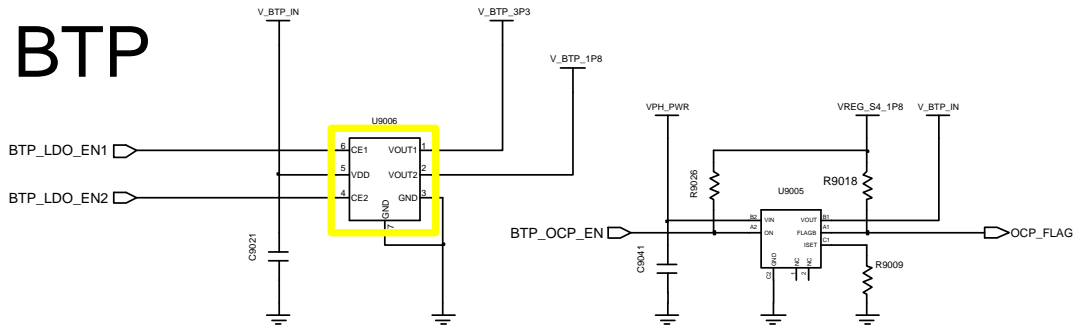




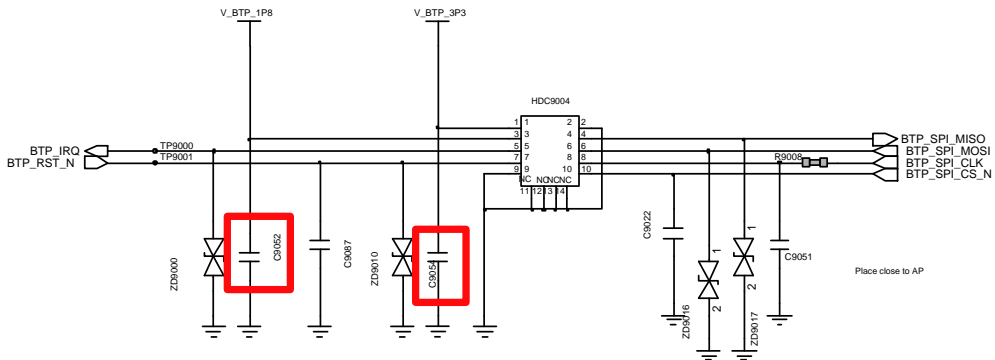
## 8-3-23. Finger Print Sensor



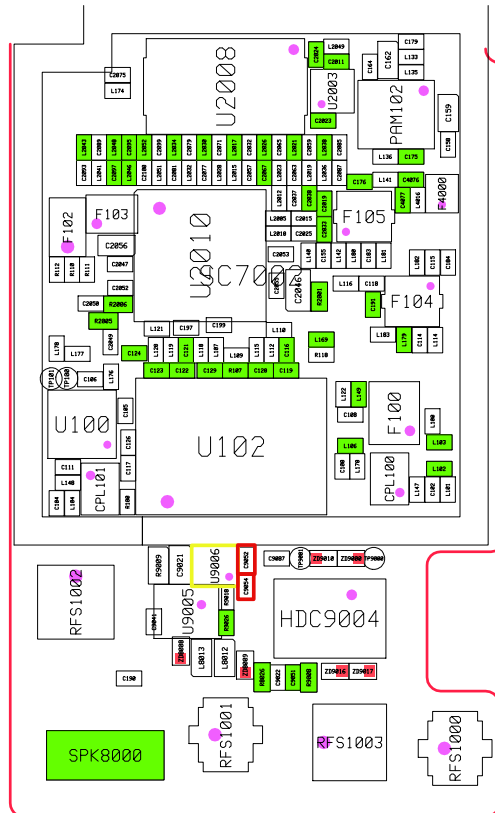
# BTP



BTP OCP and PWR

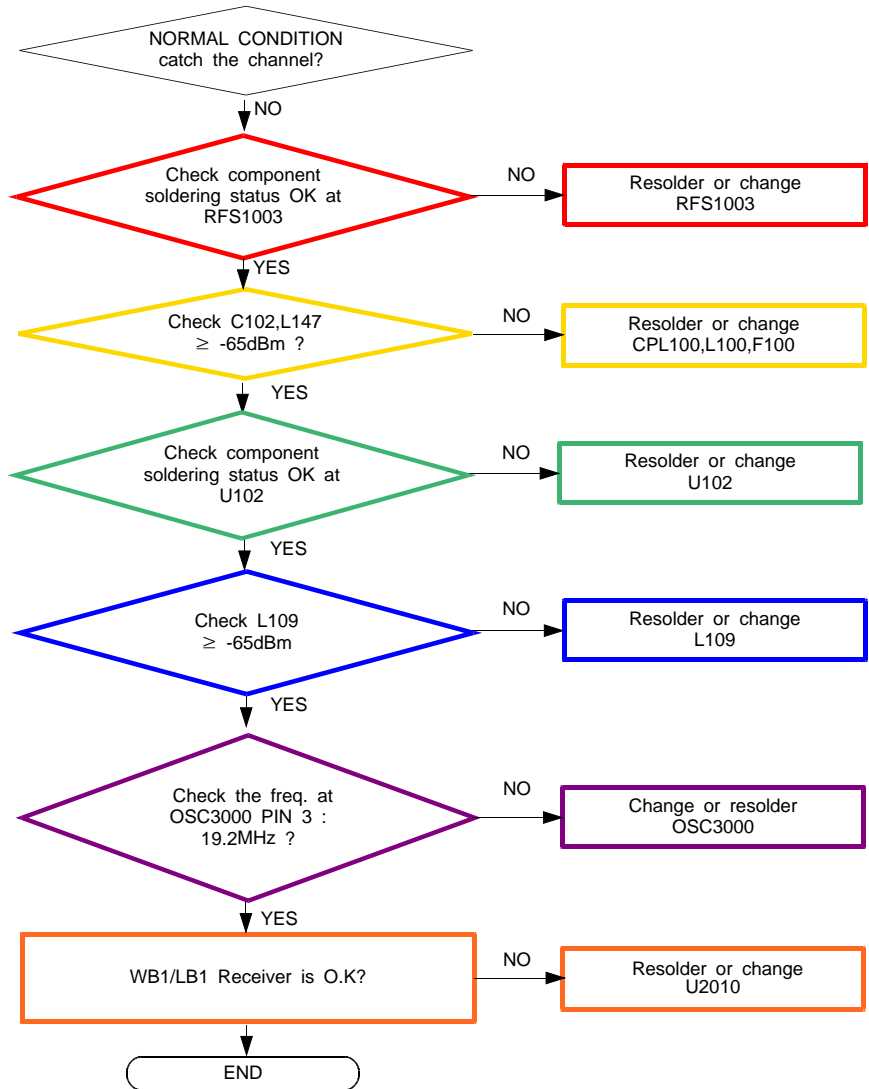


BTP IF Conn

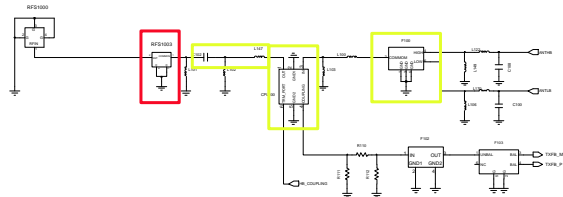


8-3-24. LTE Band1 / WCDMA Band1 RX

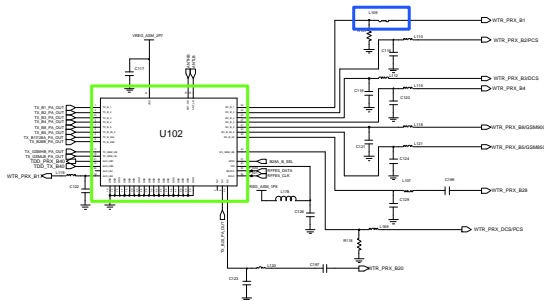
CONTINUOUS RX ON  
 RF INPUT : 9750CH (LTE)  
 10700CH (WCDMA)  
 AMP : -50dBm



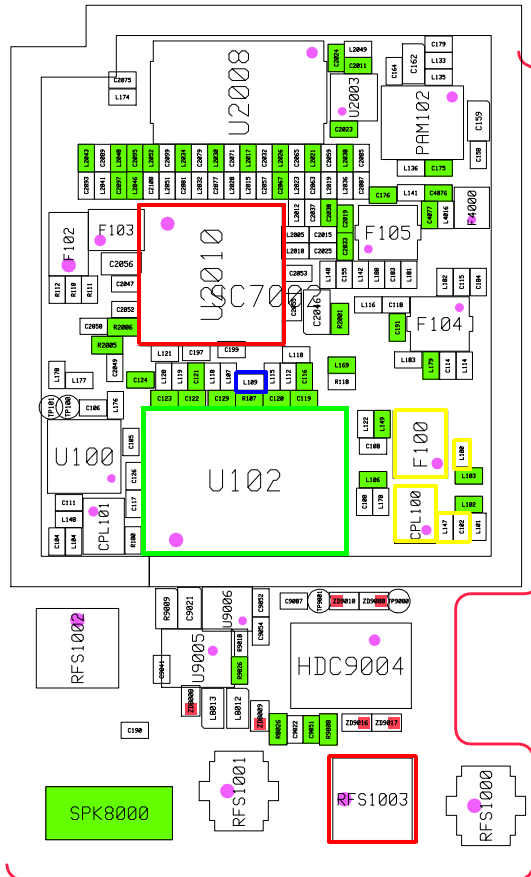
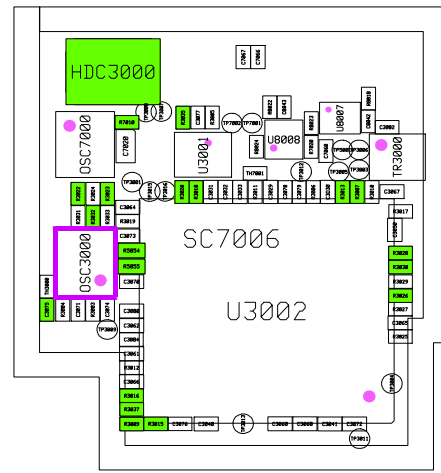
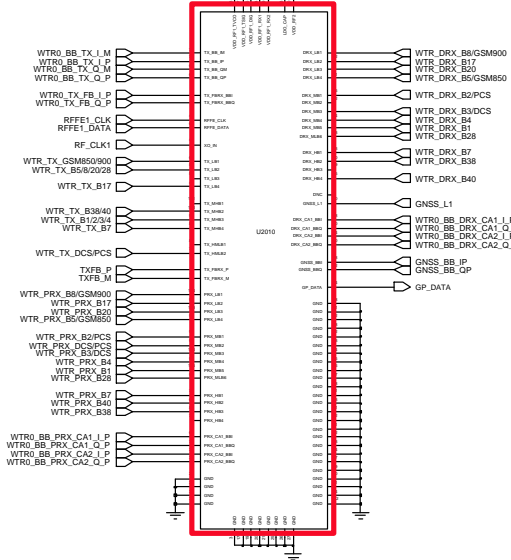
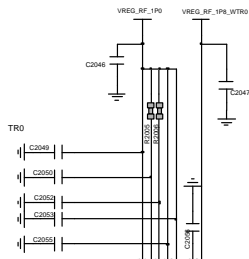
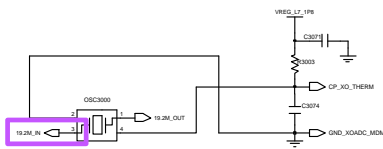




MAIN CA COUPLER

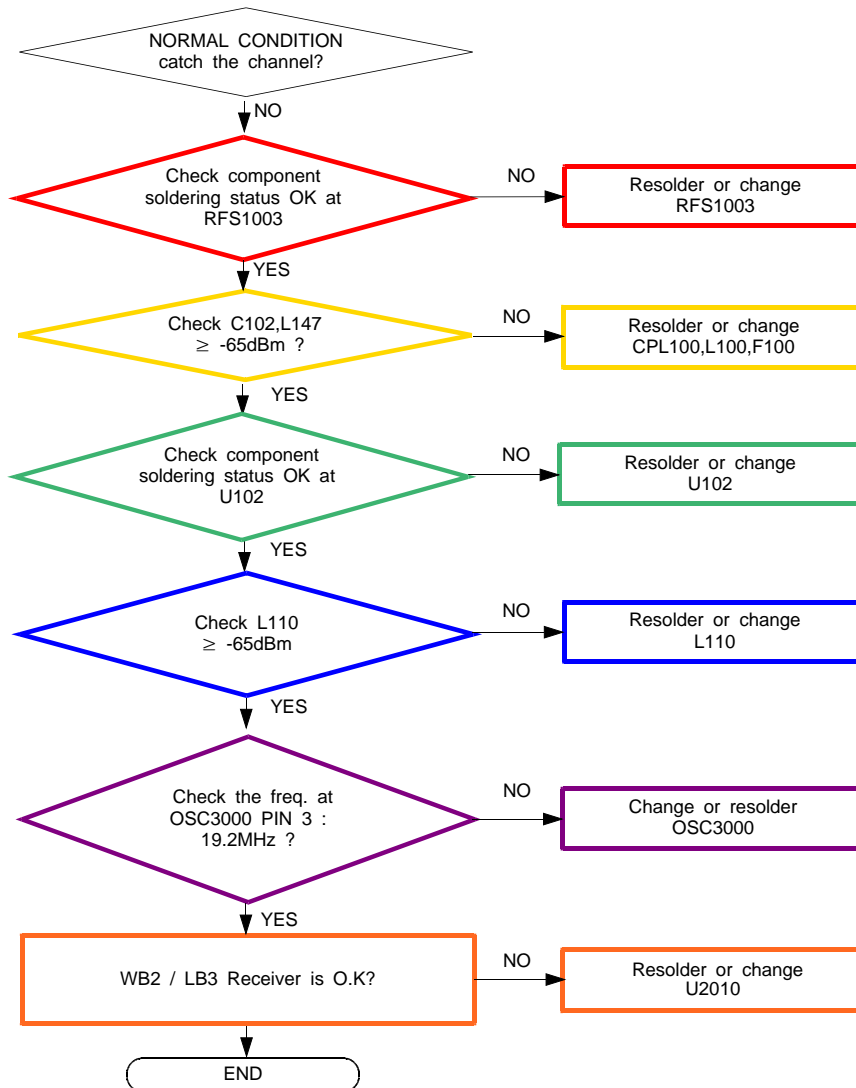


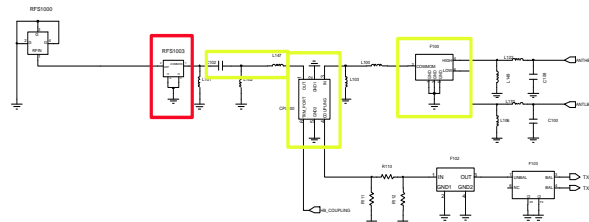
MAIN CA FEMID(BAND1/2/3/4/5/7/17/29, GSM QUAD )



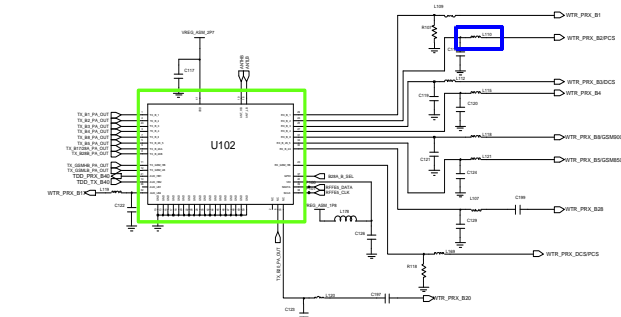
8-3-25. LTE Band2 / WCDMA Band2 / PCS

CONTINUOUS RX ON  
 RF INPUT : 9800 CH(WB2)  
 900 CH(LB2)  
 660 CH(PCS)

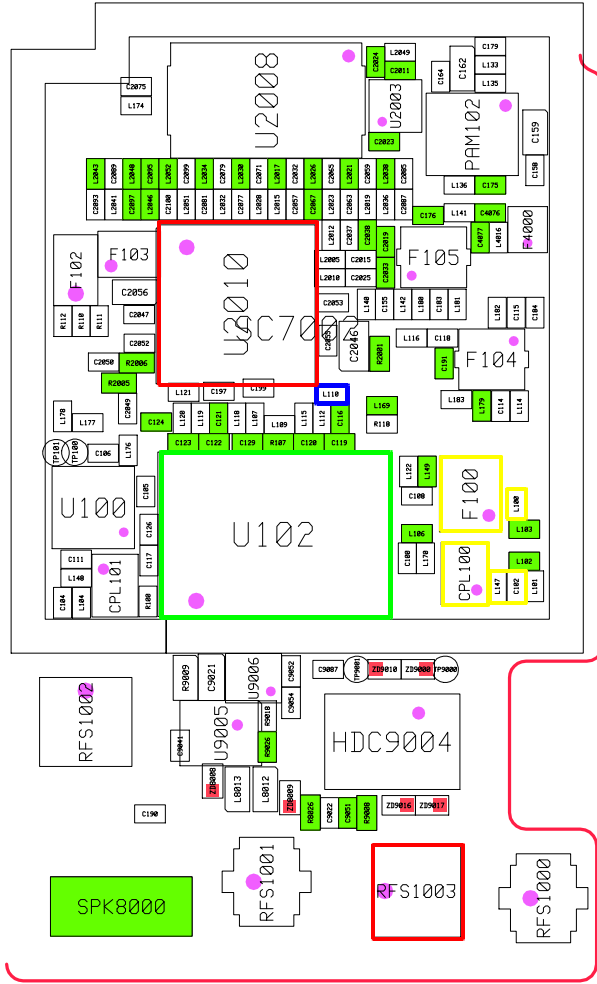
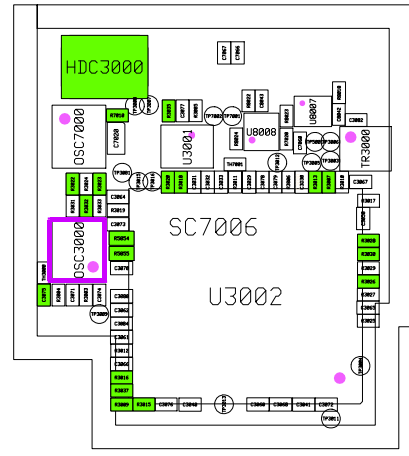
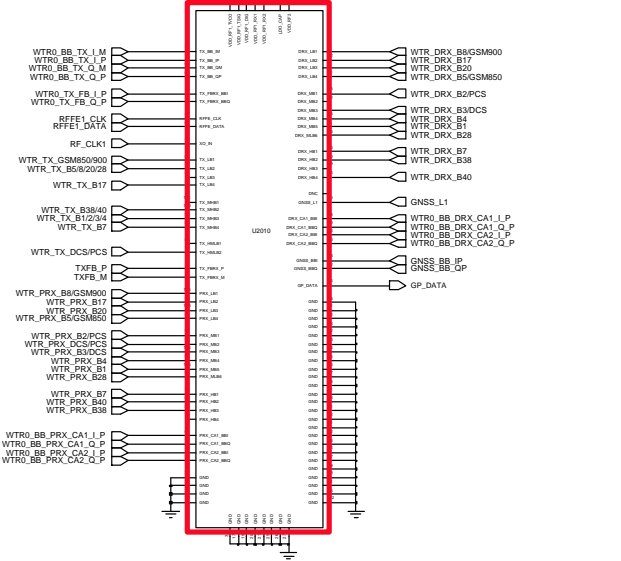
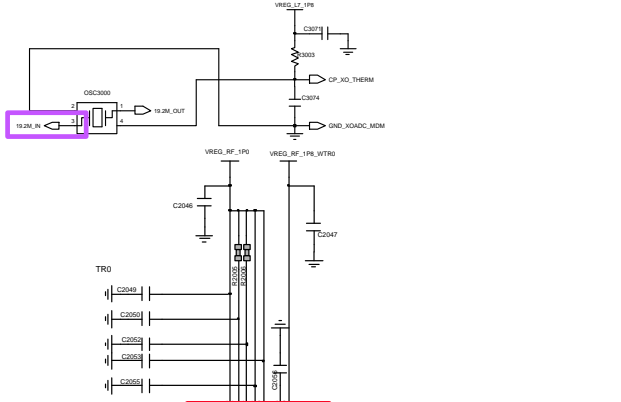




MAIN CA COUPLER

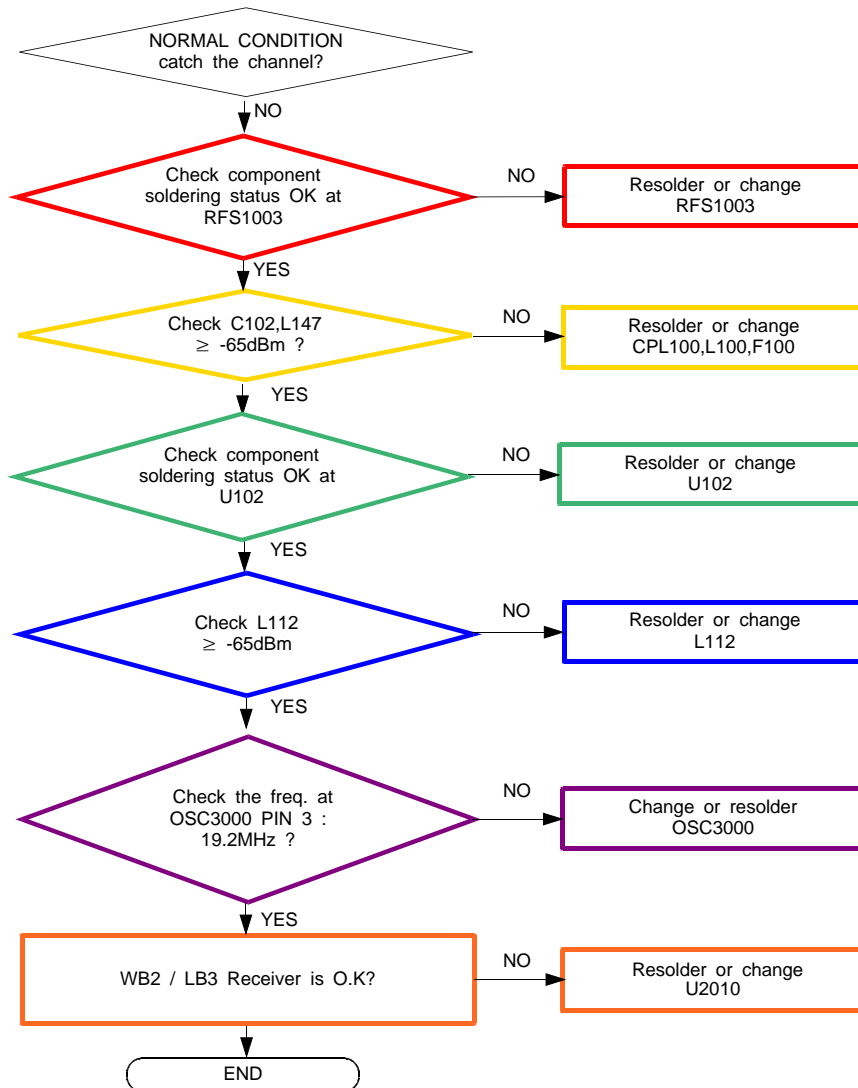


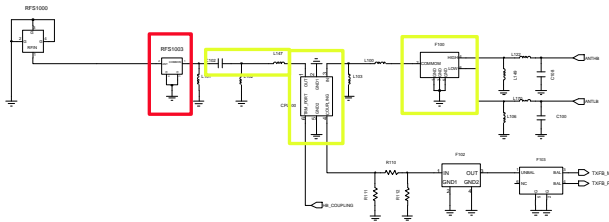
MAIN CA FEMID(BAND 1/2/3/4/5/7/17/29, GSM QUAD)



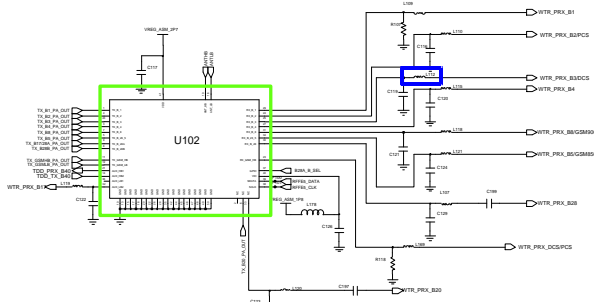
8-3-26. LTE Band3 / DCS

CONTINUOUS RX ON  
 RF INPUT : 1575 CH(LB3)  
 660 CH (DCS)  
 AMP : -50dBm

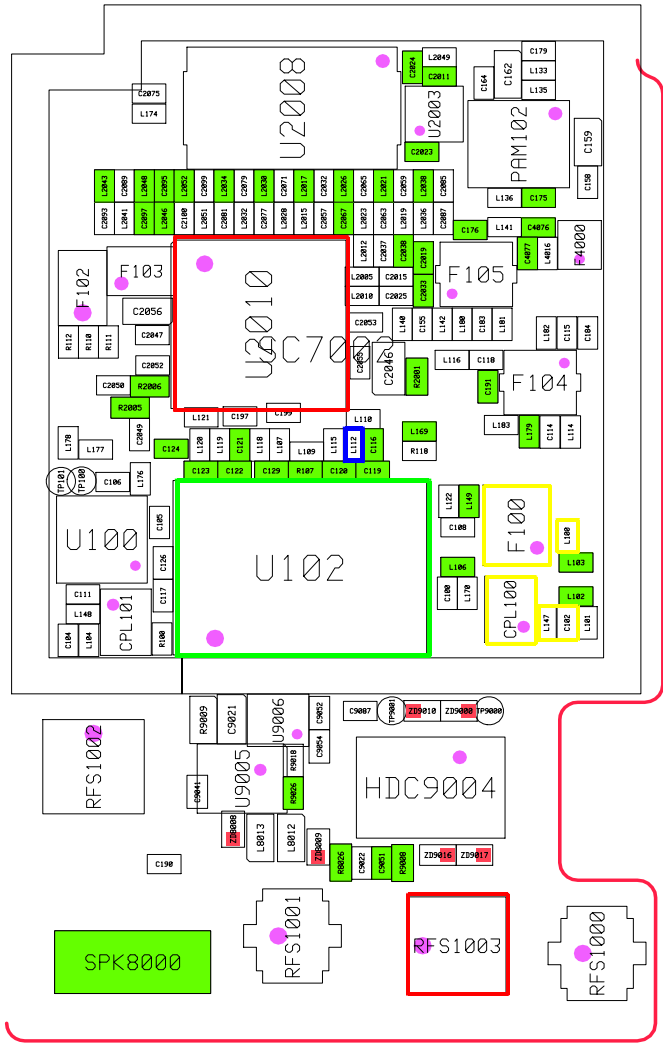
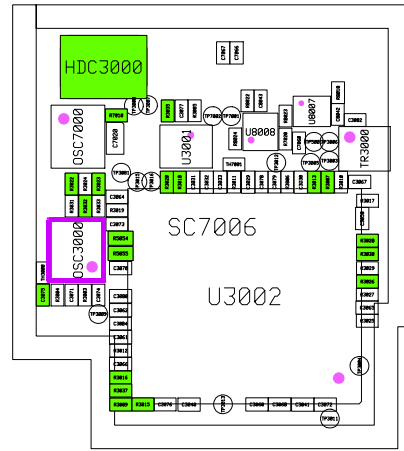
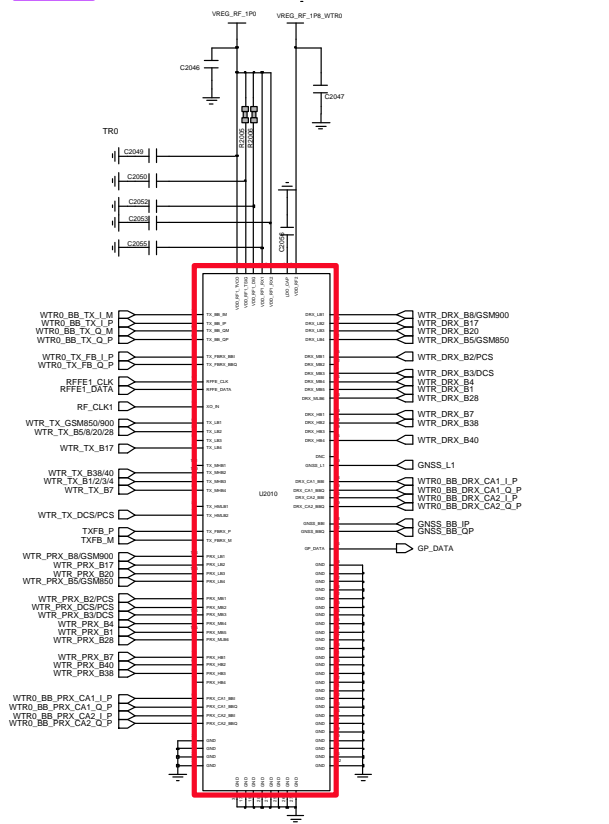
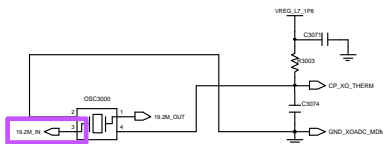




MAIN CA COUPLER

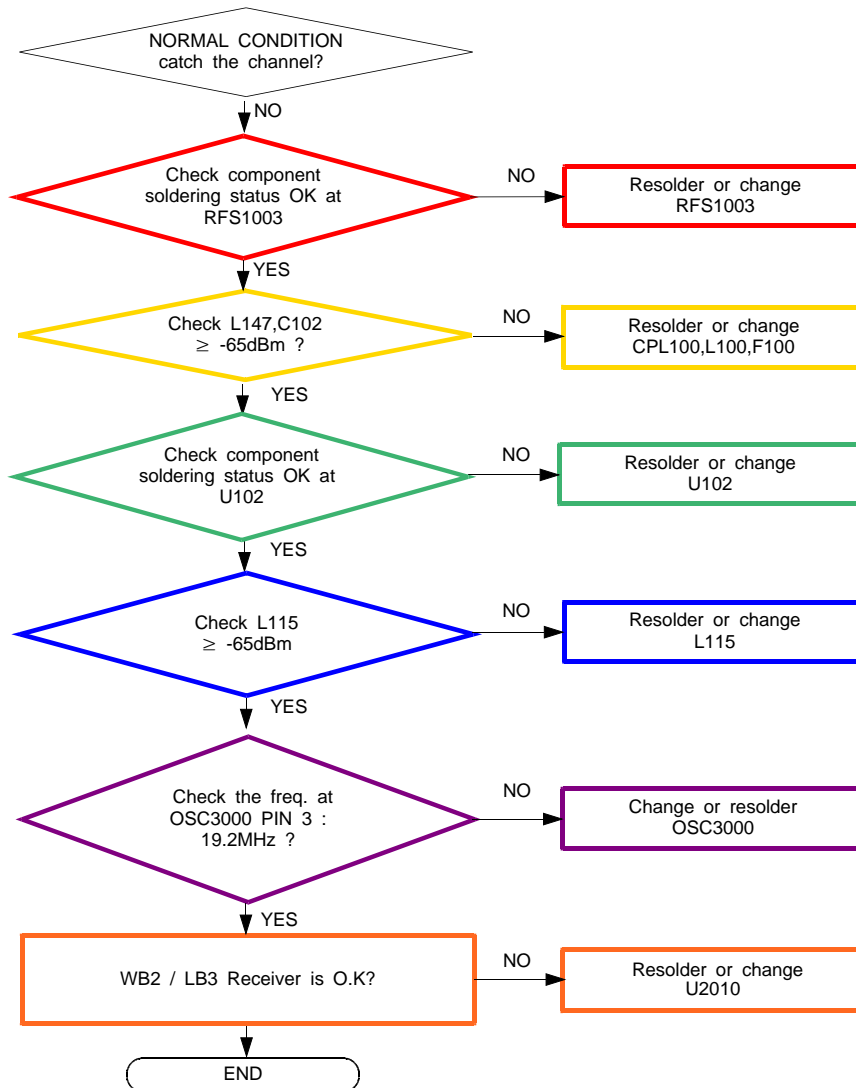


MAIN CA FEMID(BAND1/2/3/4/5/7/17/29, GSM QUAD)



8-3-27. LTE Band4

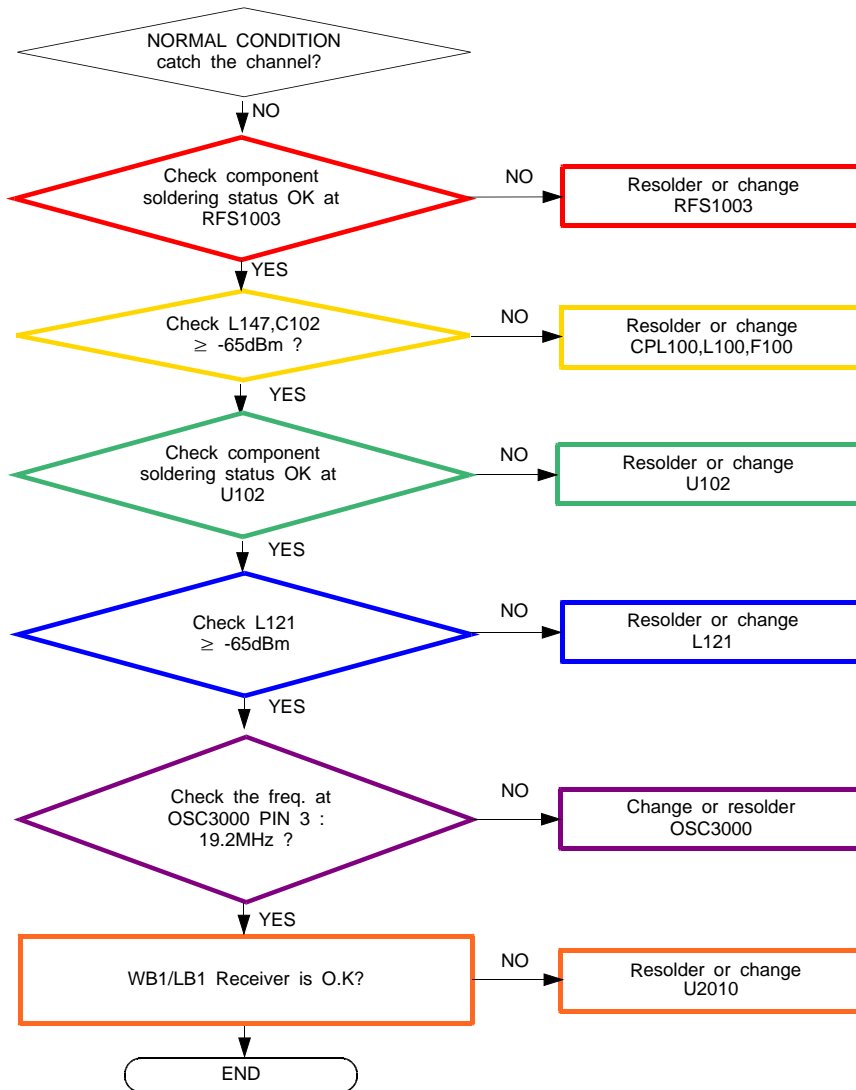
CONTINUOUS RX ON  
RF INPUT : 2175 CH  
AMP : -50dBm



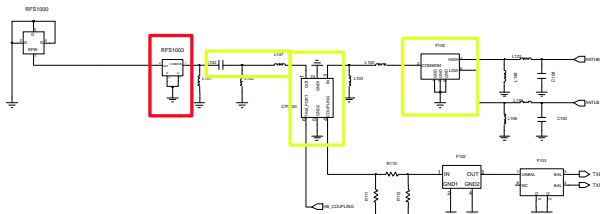


8-3-28. LTE Band5 RX / WCDMA B5 / GSM850

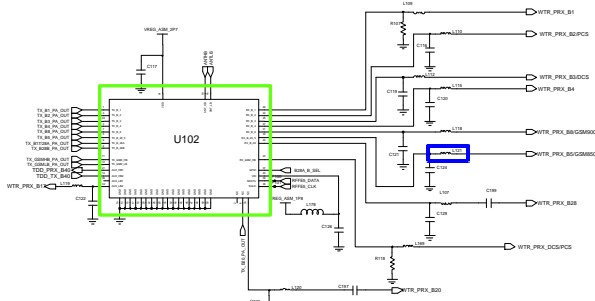
CONTINUOUS RX ON  
 RF INPUT : 4407 CH(WB5)  
 2525 CH(LB5)  
 190 CH(GSM850)



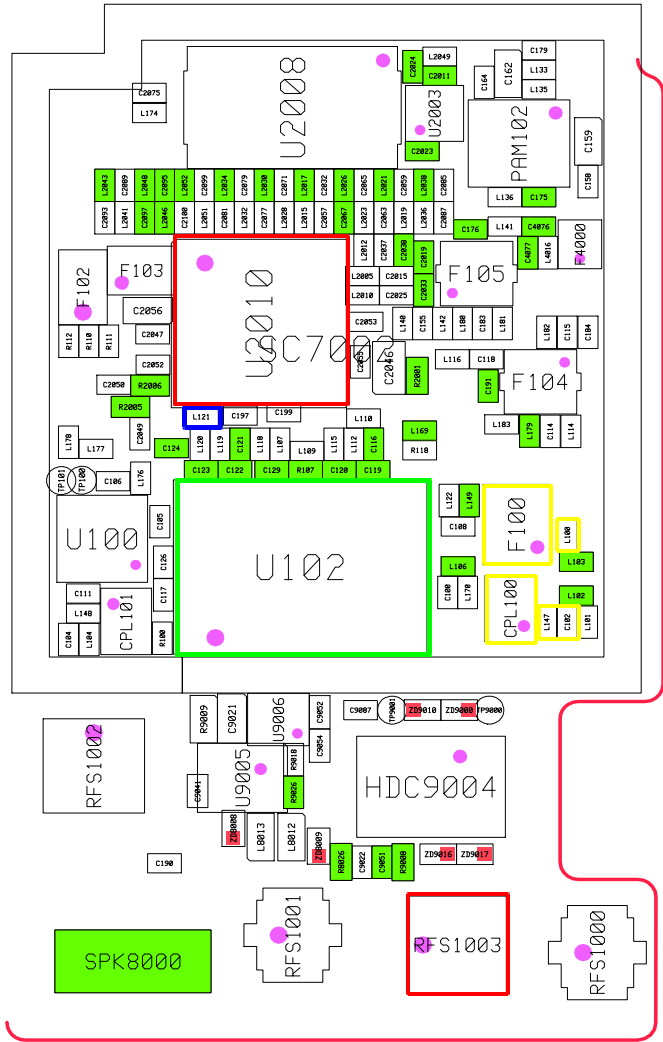
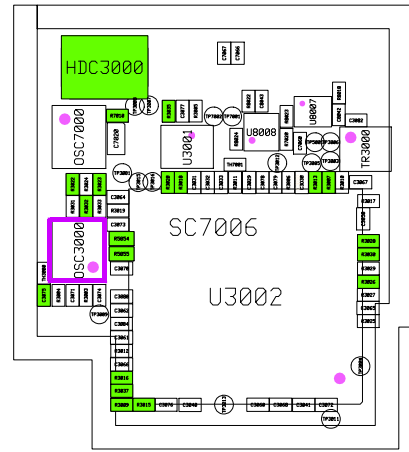
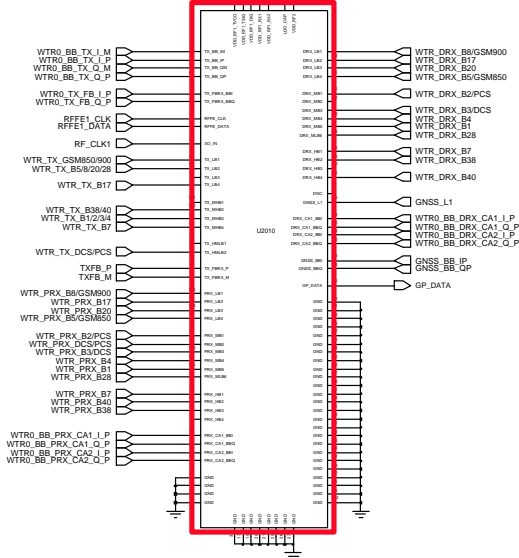
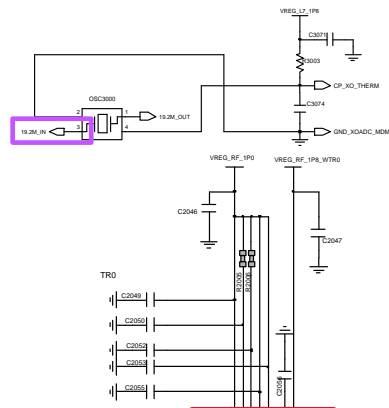




MAIN CA COUPLEXER

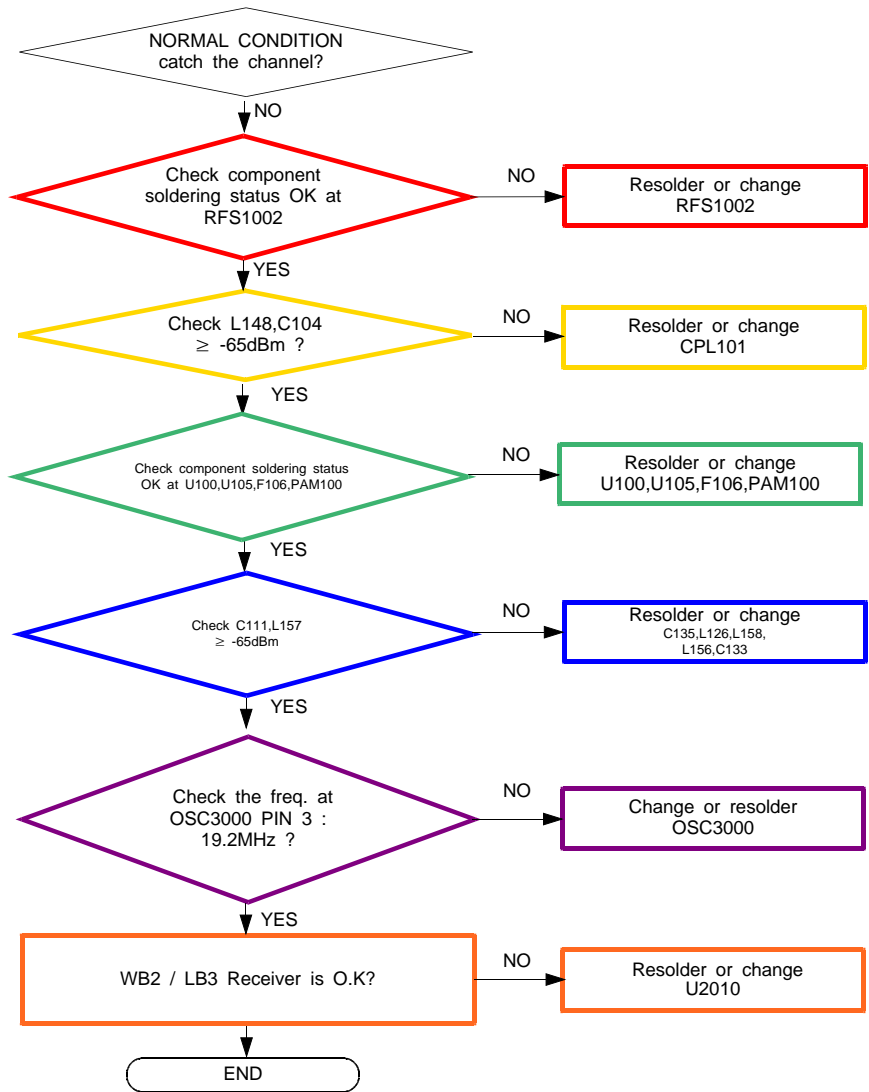


MAIN CA FEMID(BAND1/2/3/4/5/7/17/29, GSM QUAD )



8-3-29. LTE Band7

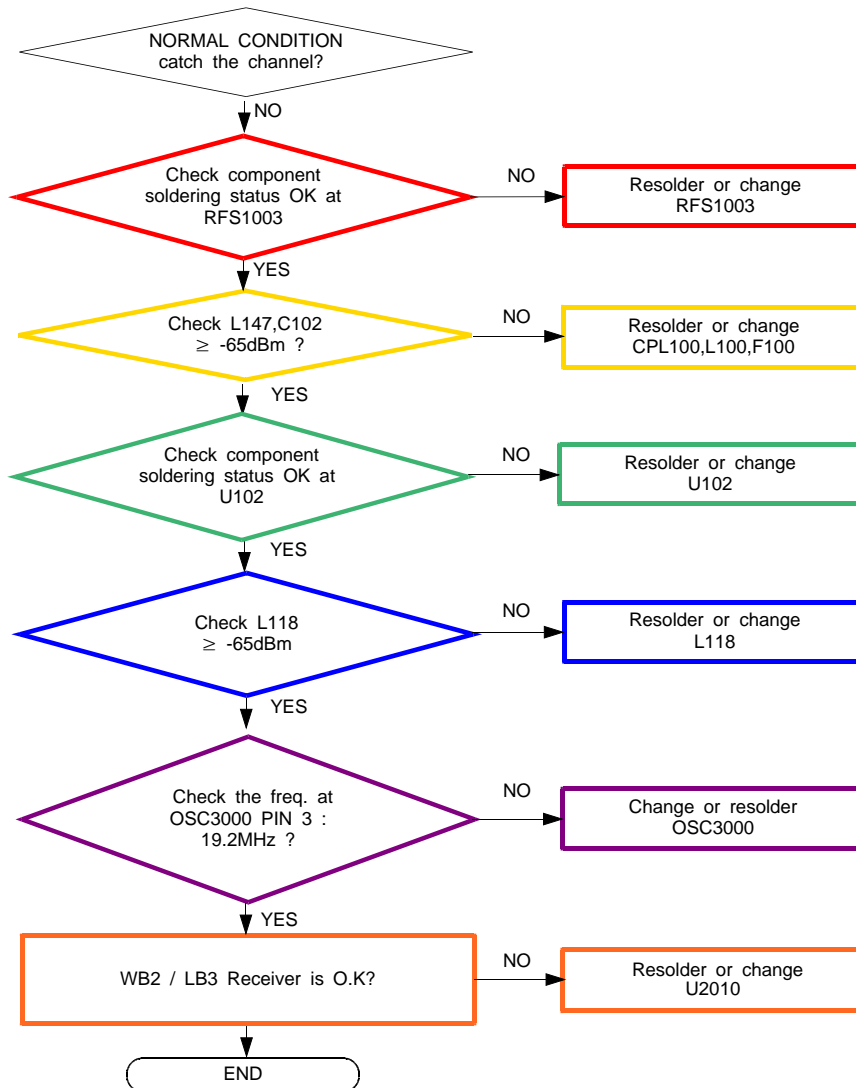
CONTINUOUS RX ON  
RF INPUT : 3100CH  
AMP : -50dBm

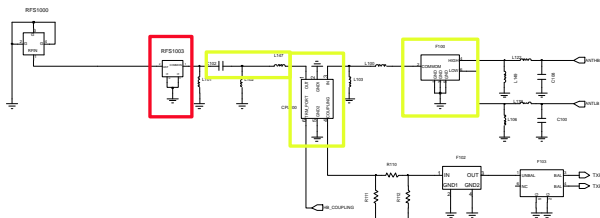




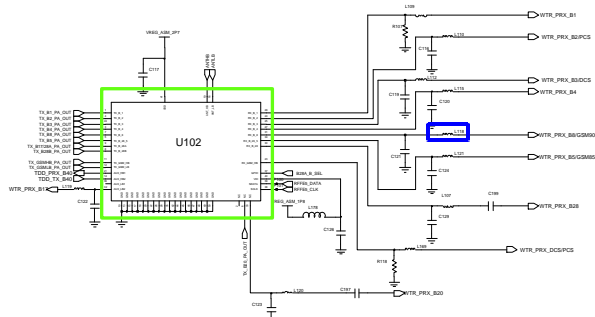
8-3-30. LTE Band8 RX / GSM900

CONTINUOUS RX ON  
 RF INPUT : 9435 CH(WCDMA B8)  
 62CH (GSM900)  
 AMP : -50dBm

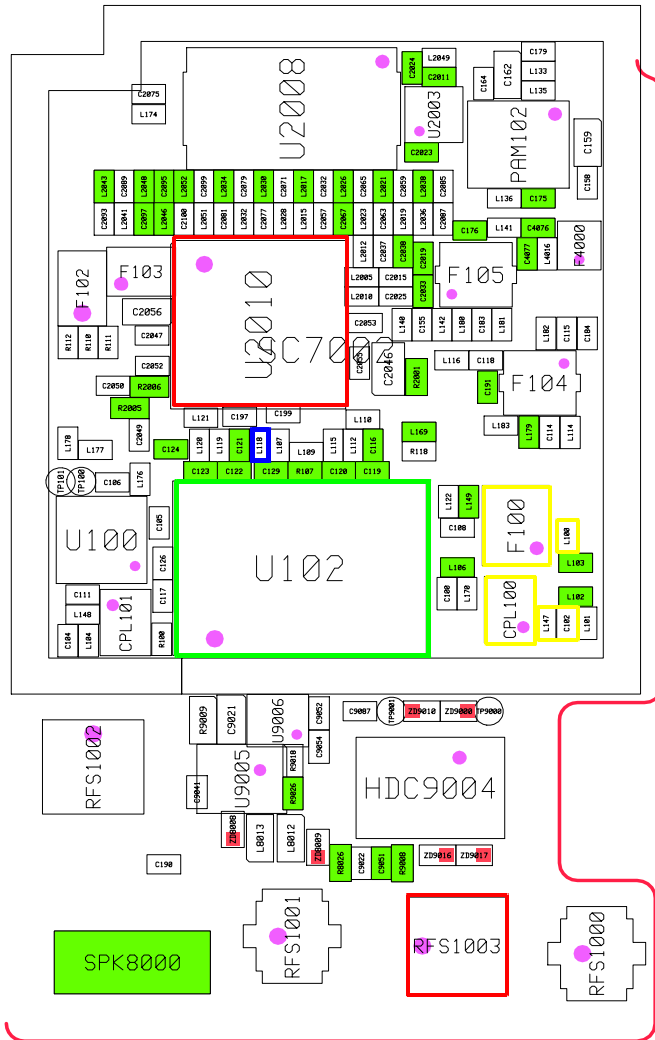
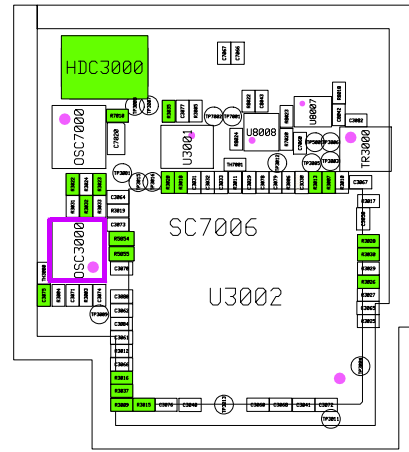
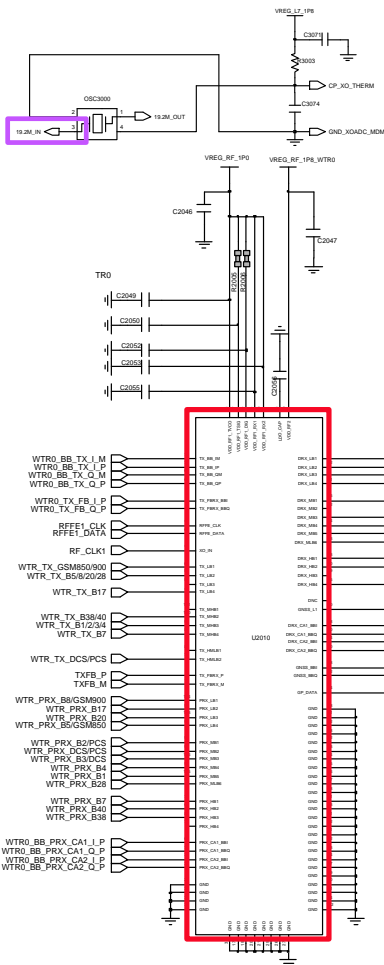




MAIN CA COUPLER

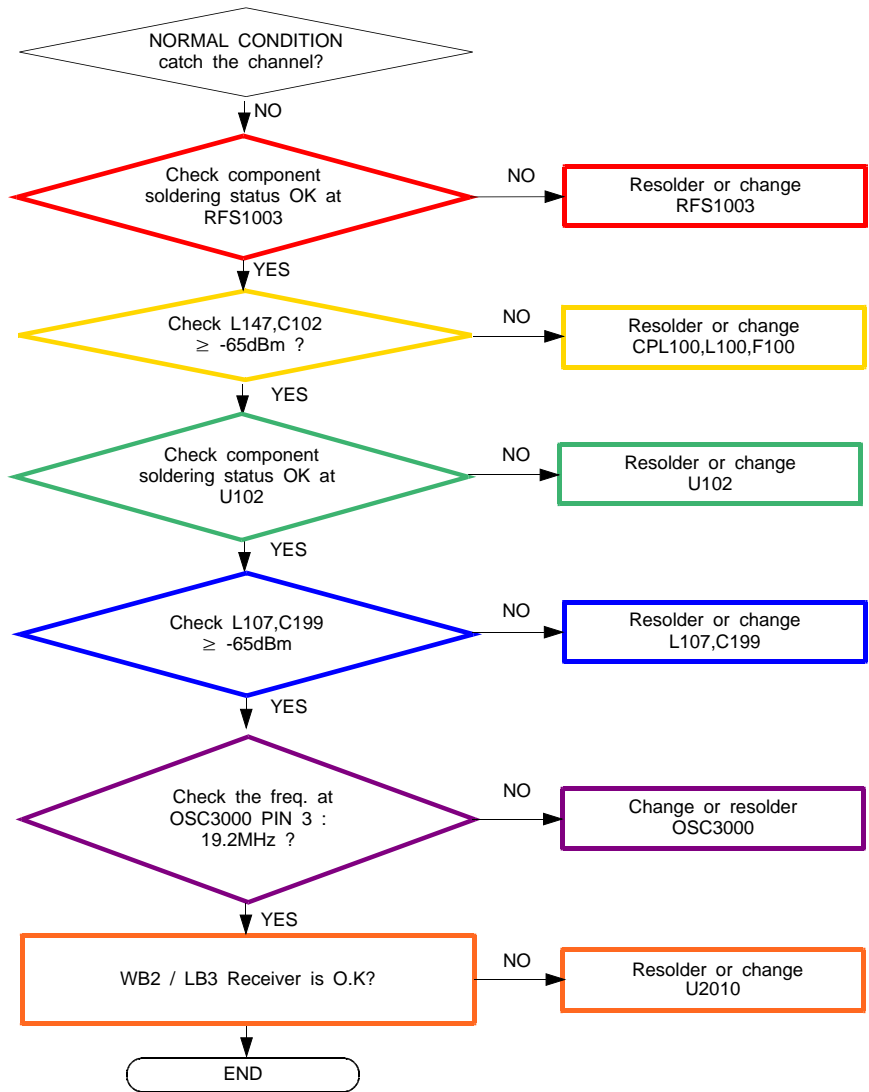


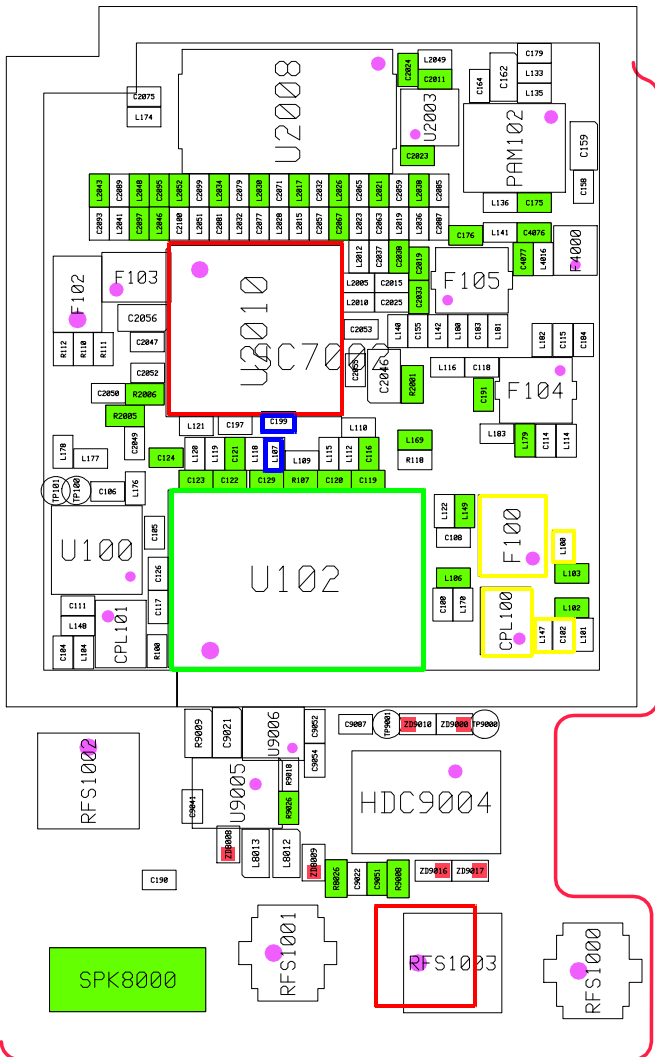
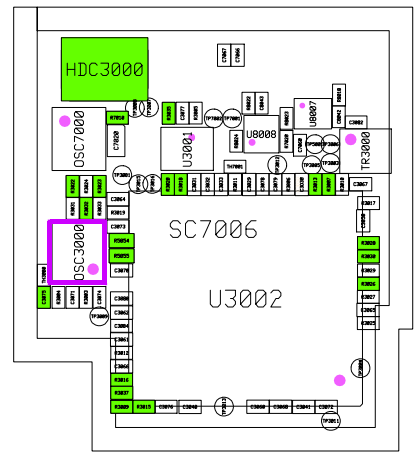
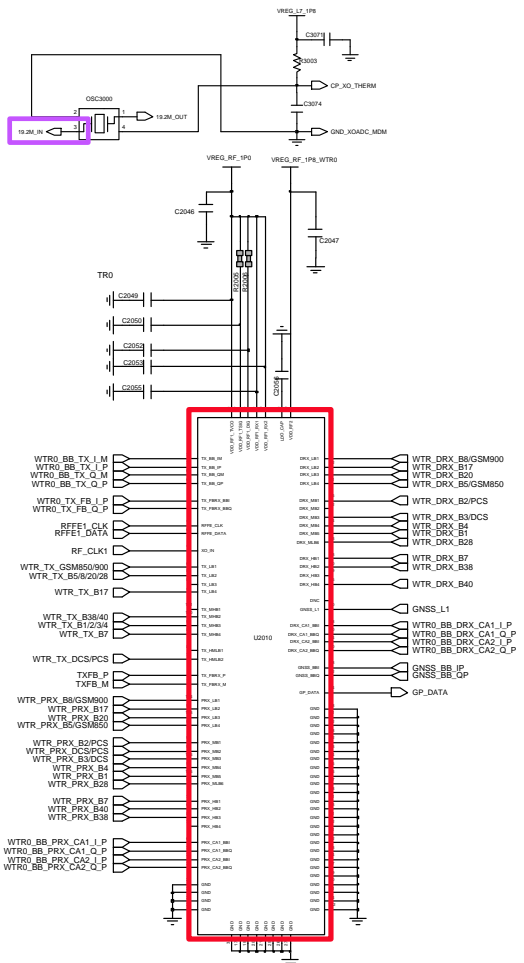
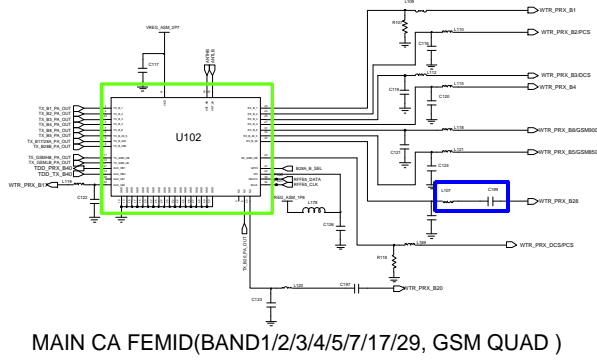
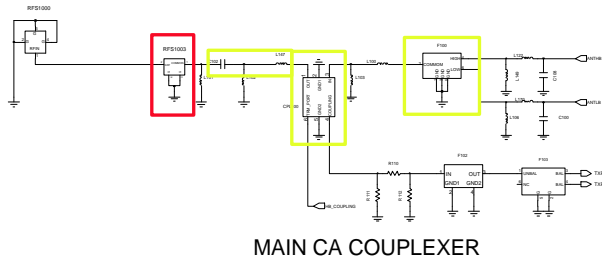
MAIN CA FEMID(BAND1/2/3/4/5/7/17/29, GSM QUAD )



8-3-31. LTE Band28 RX

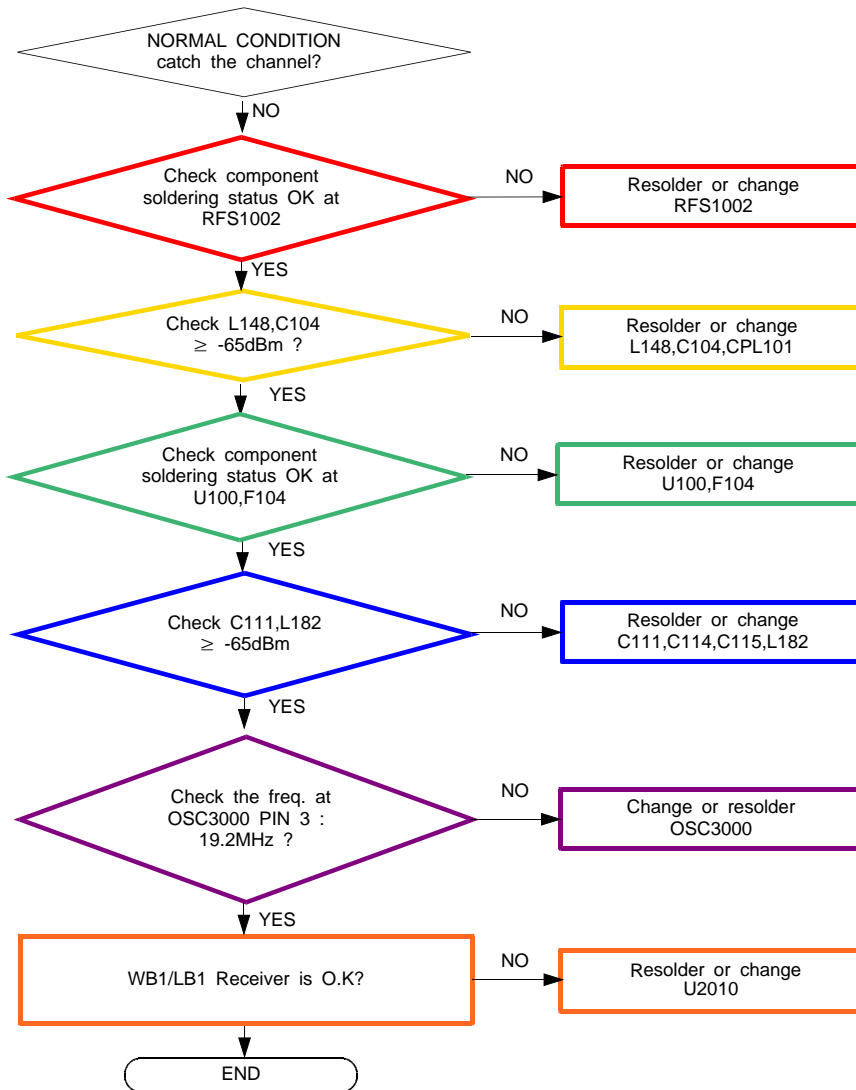
CONTINUOUS RX ON  
 RF INPUT : 9435CH  
 AMP : -50dBm



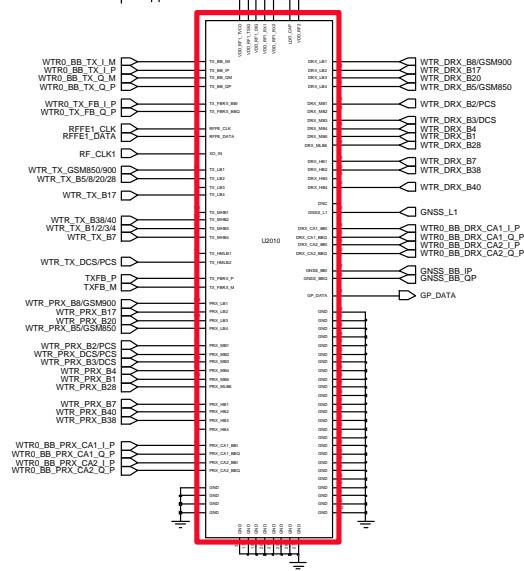
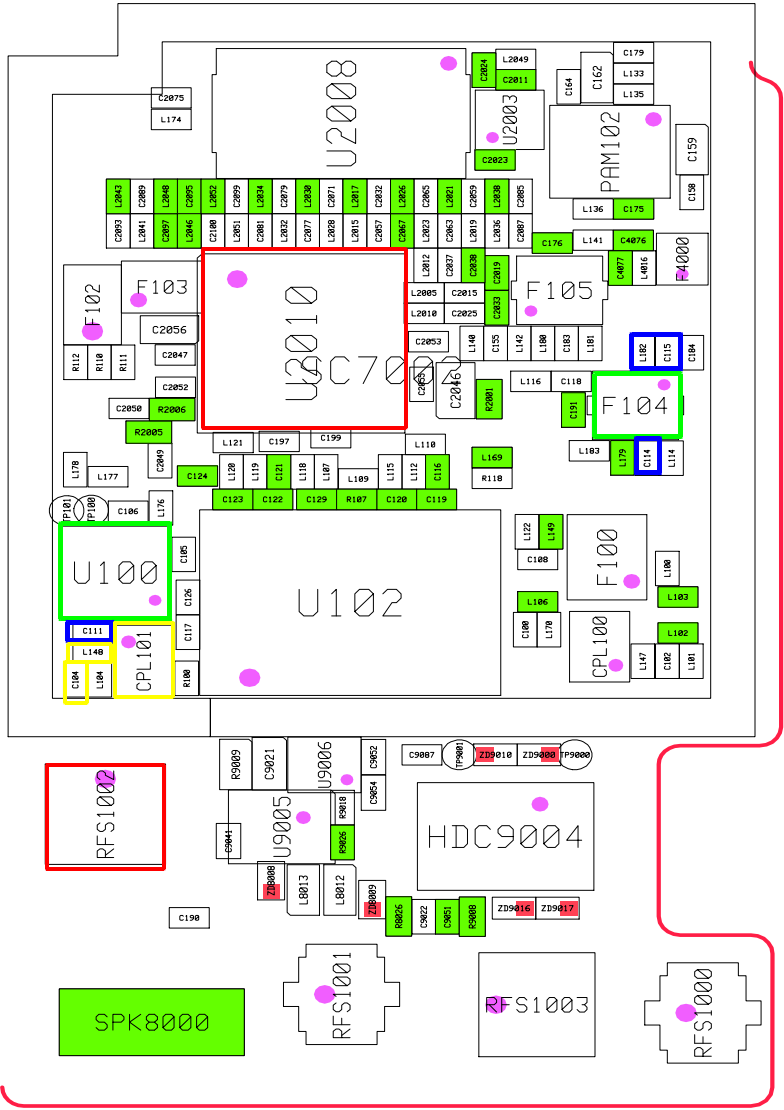
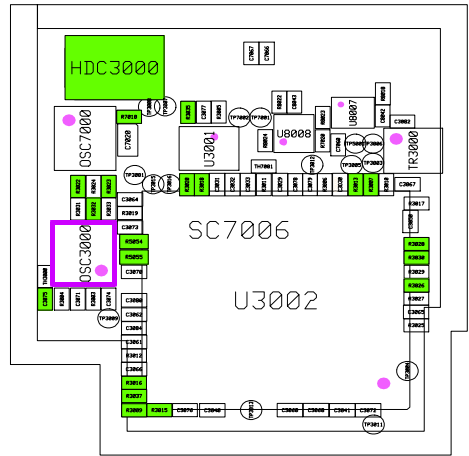
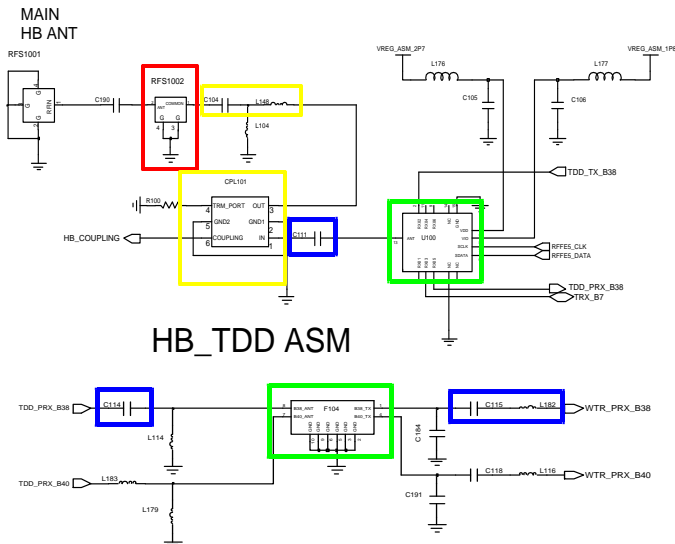


8-3-32. LTE Band38 RX

CONTINUOUS RX ON  
 RF 38 INPUT : 38000  
 AMP : -50dBm

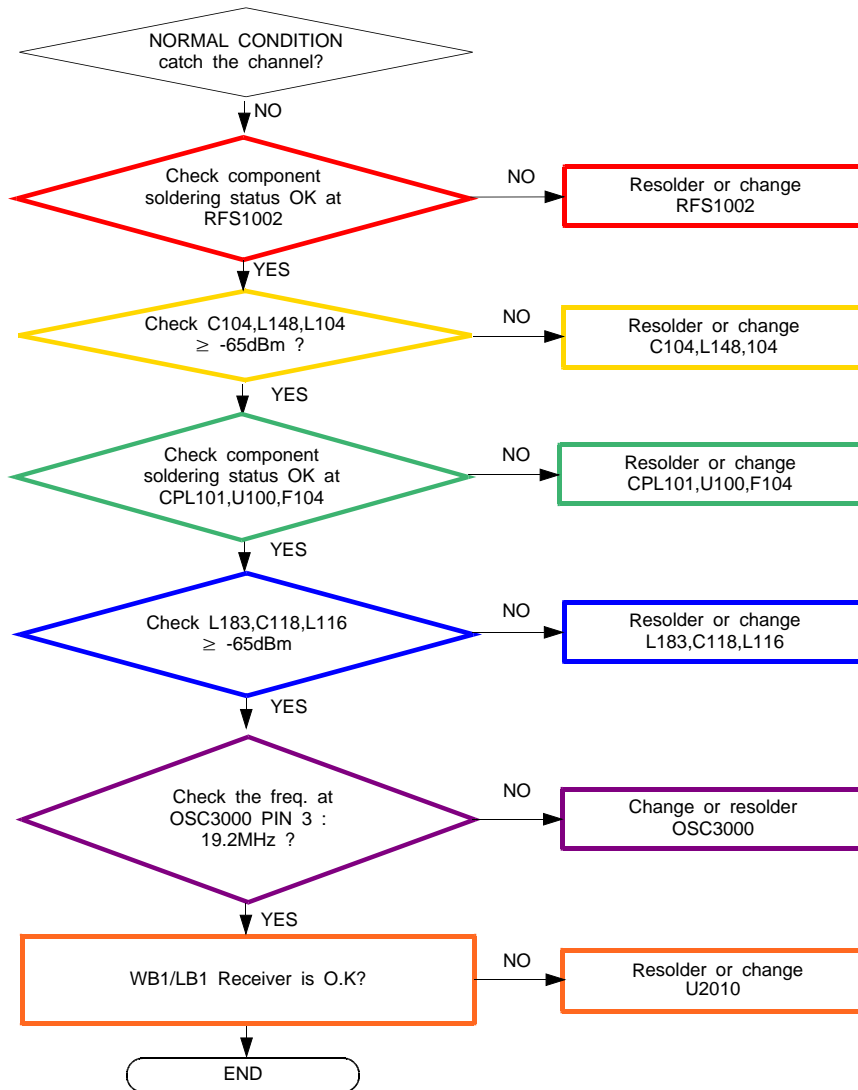






8-3-33. LTE Band40 RX

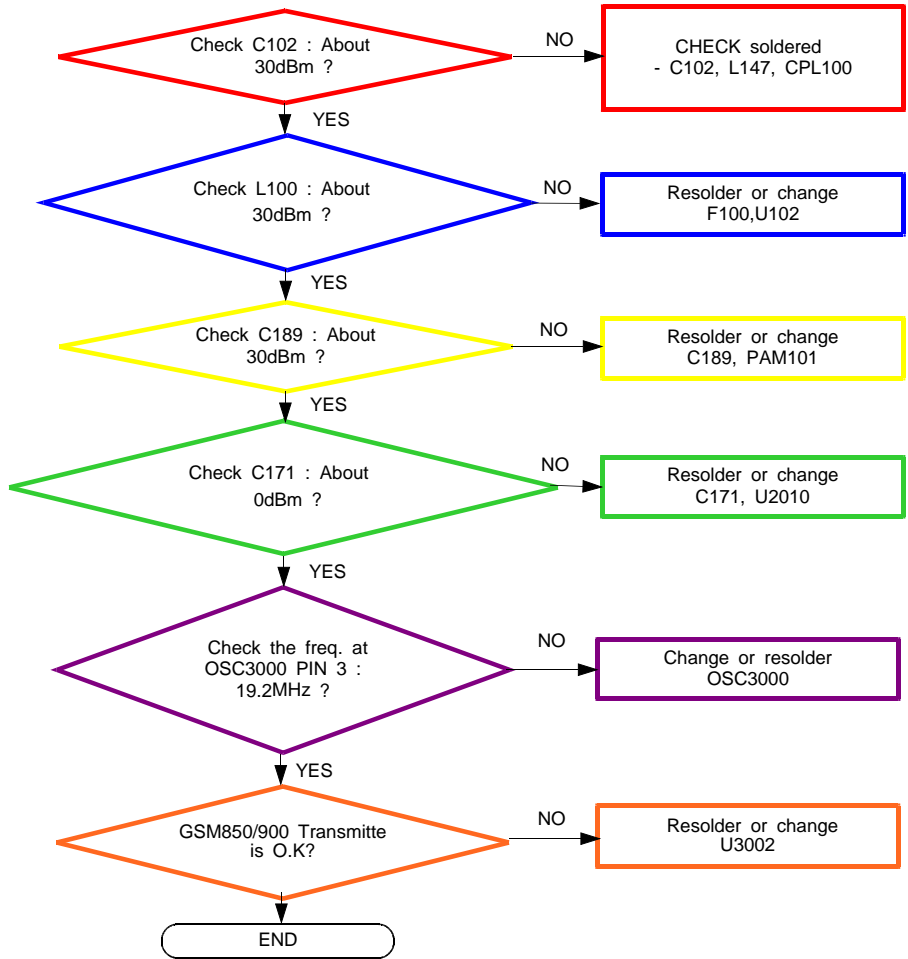
CONTINUOUS RX ON  
 RF B40 INPUT : 39150  
 AMP : -50dBm





8-3-34. GSM850/GSM900 TX

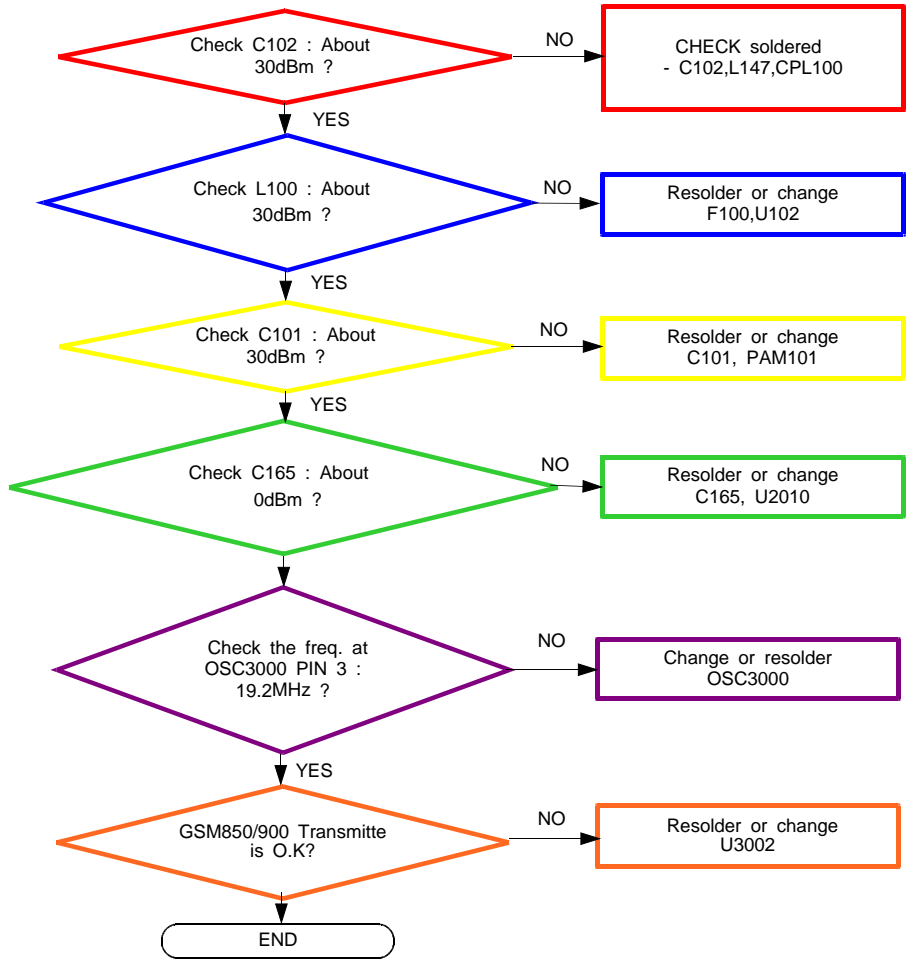
CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 GSM850 CH : 190  
 GSM900 CH : 62  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB

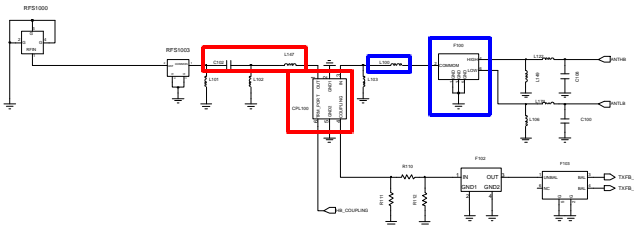




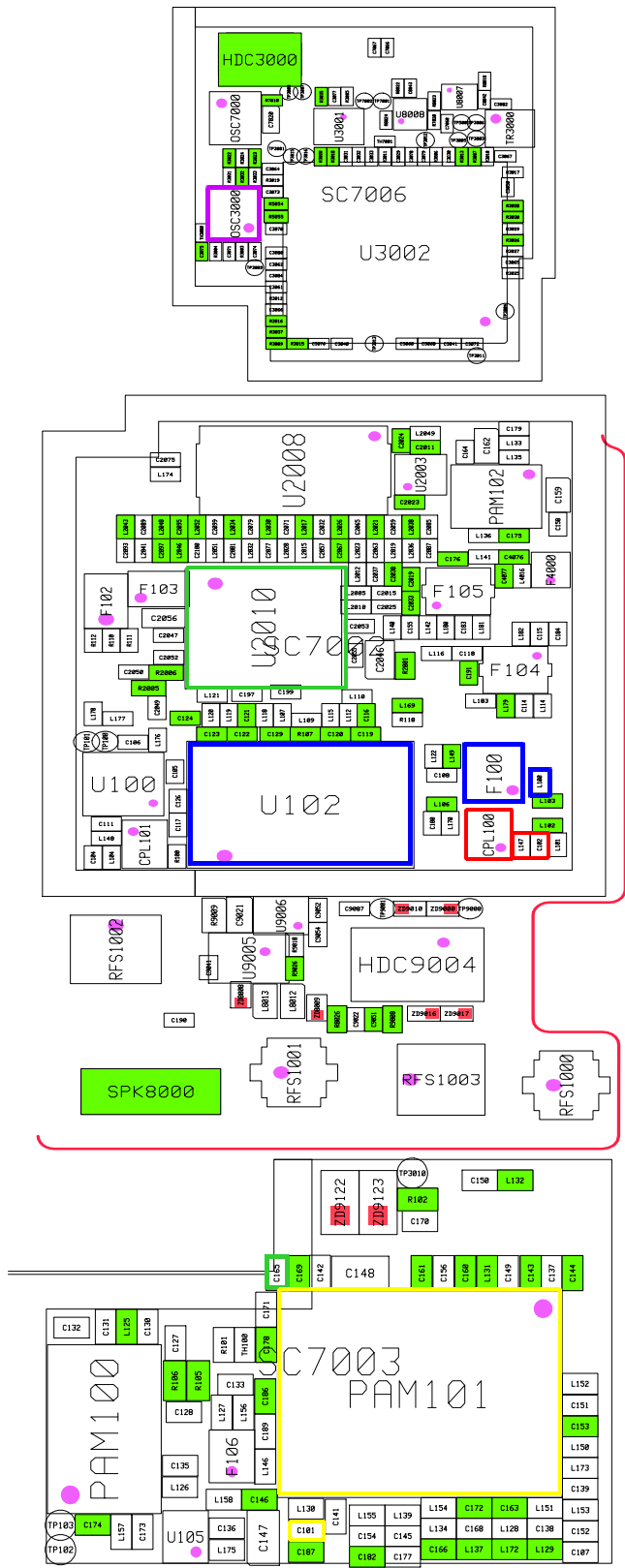
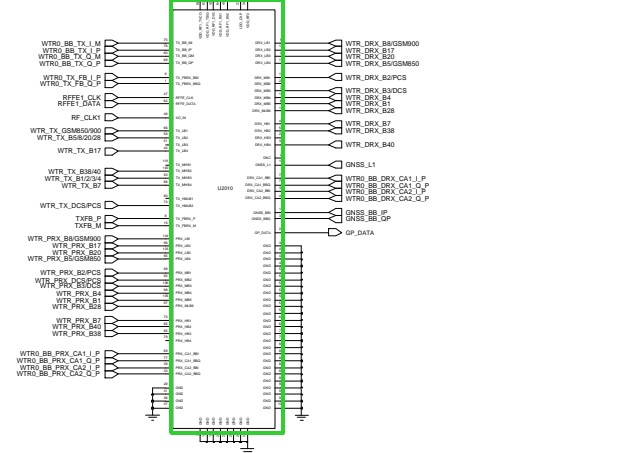
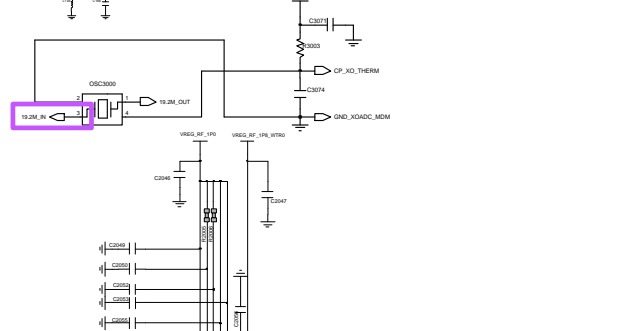
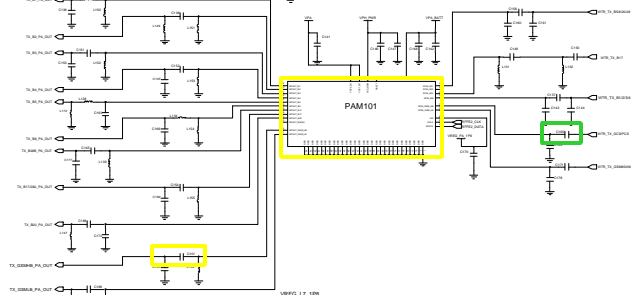
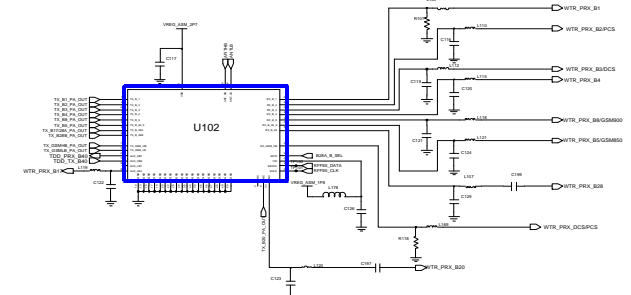
8-3-35. GSM1800/GSM1900 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 DCS CH : 698  
 PCS CH : 661  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB



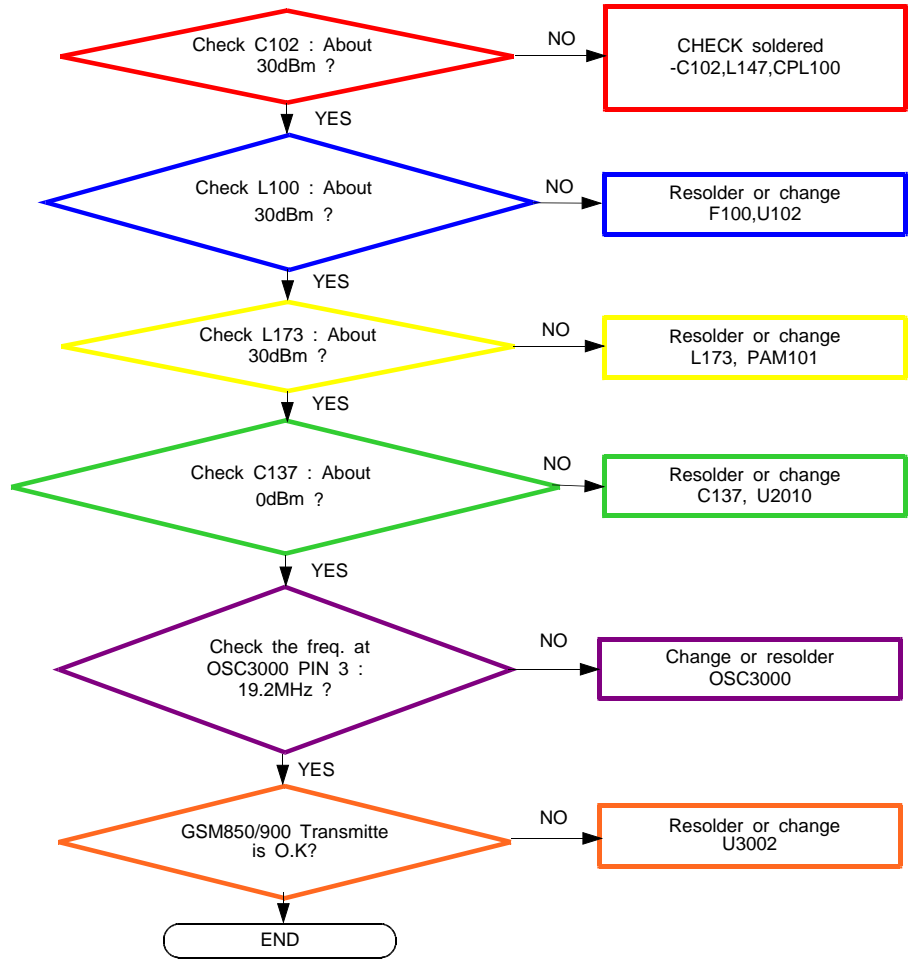


MAIN CA COUPLER

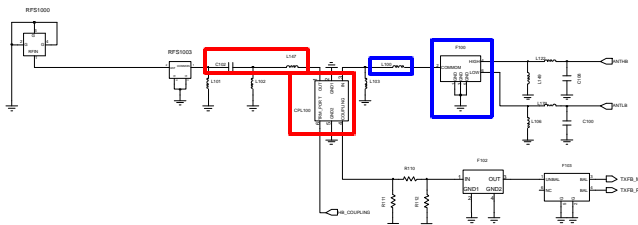


8-3-36. LTE BAND 1 / WCDMA BAND1 TX

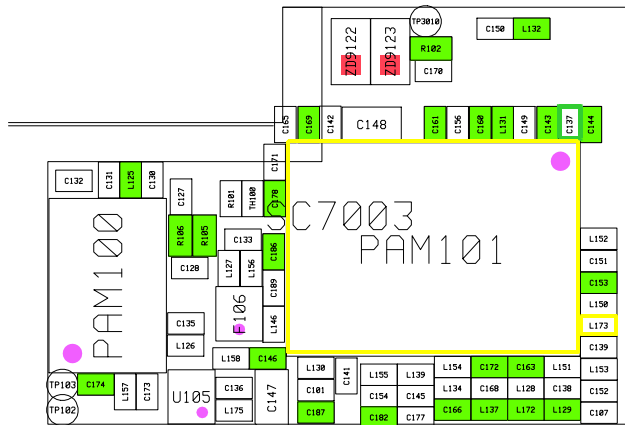
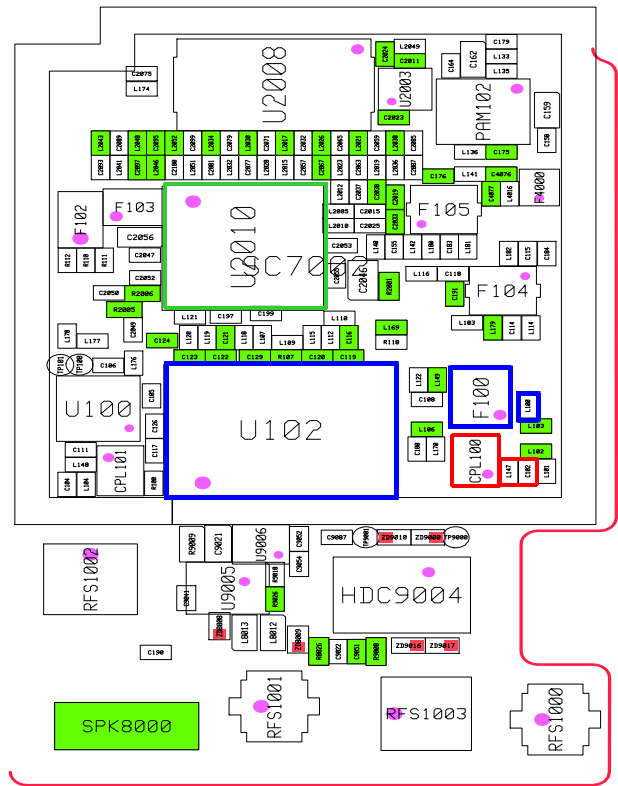
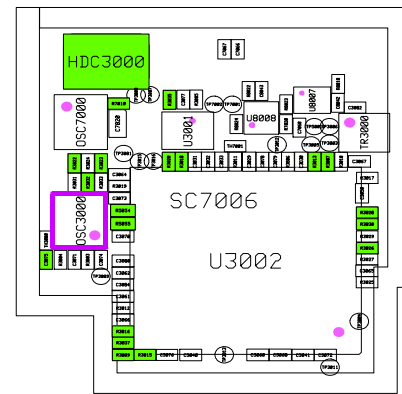
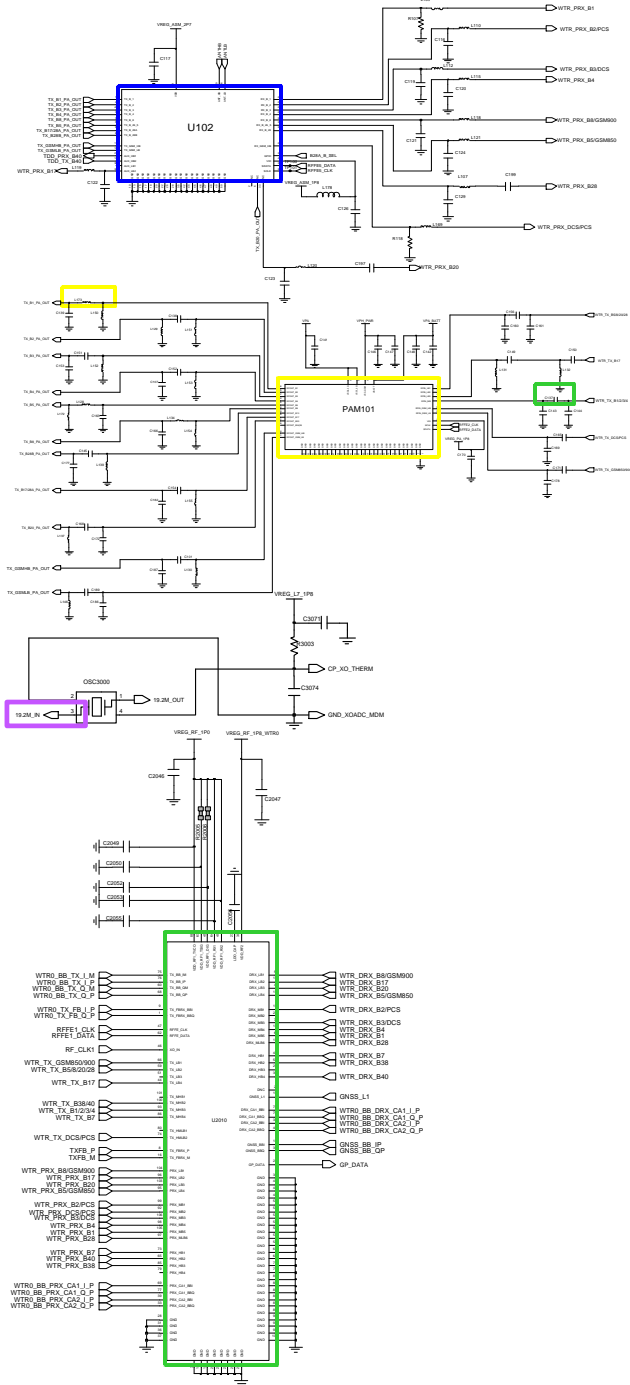
CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 WB1 CH : 10700  
 LTE B1 CH : 300  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB





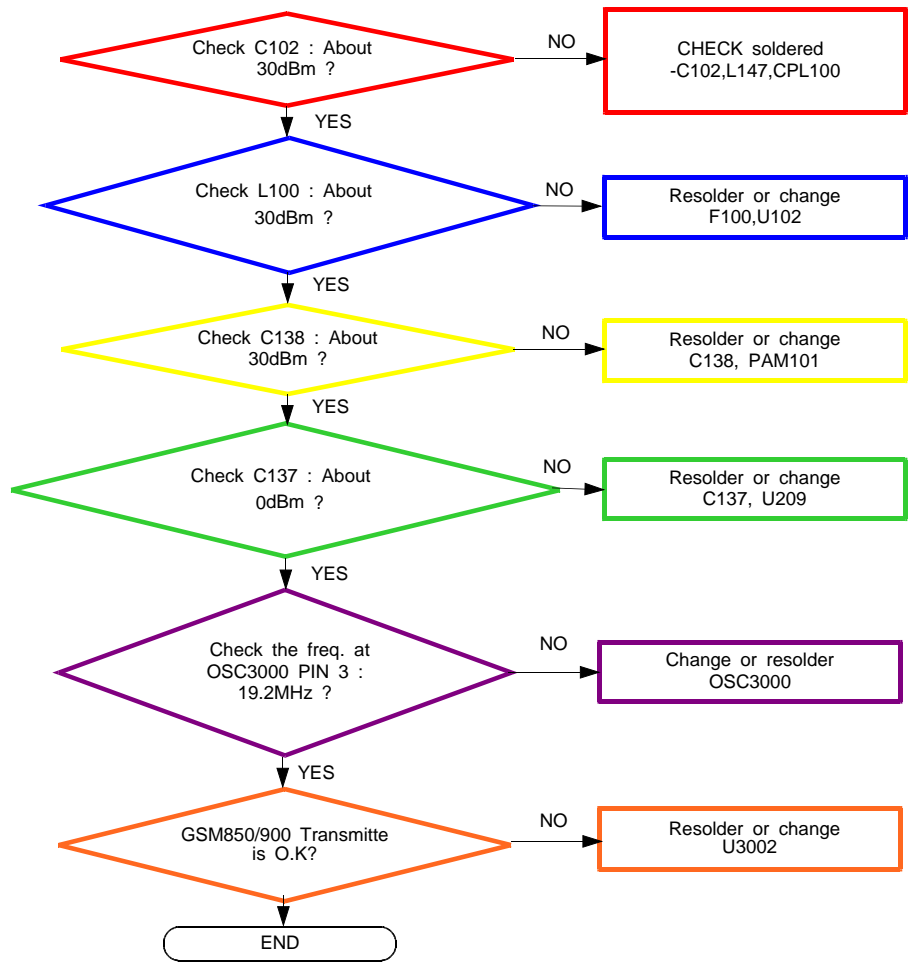


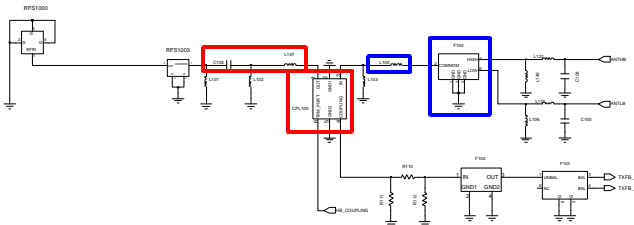
MAIN CA COUPLEXER



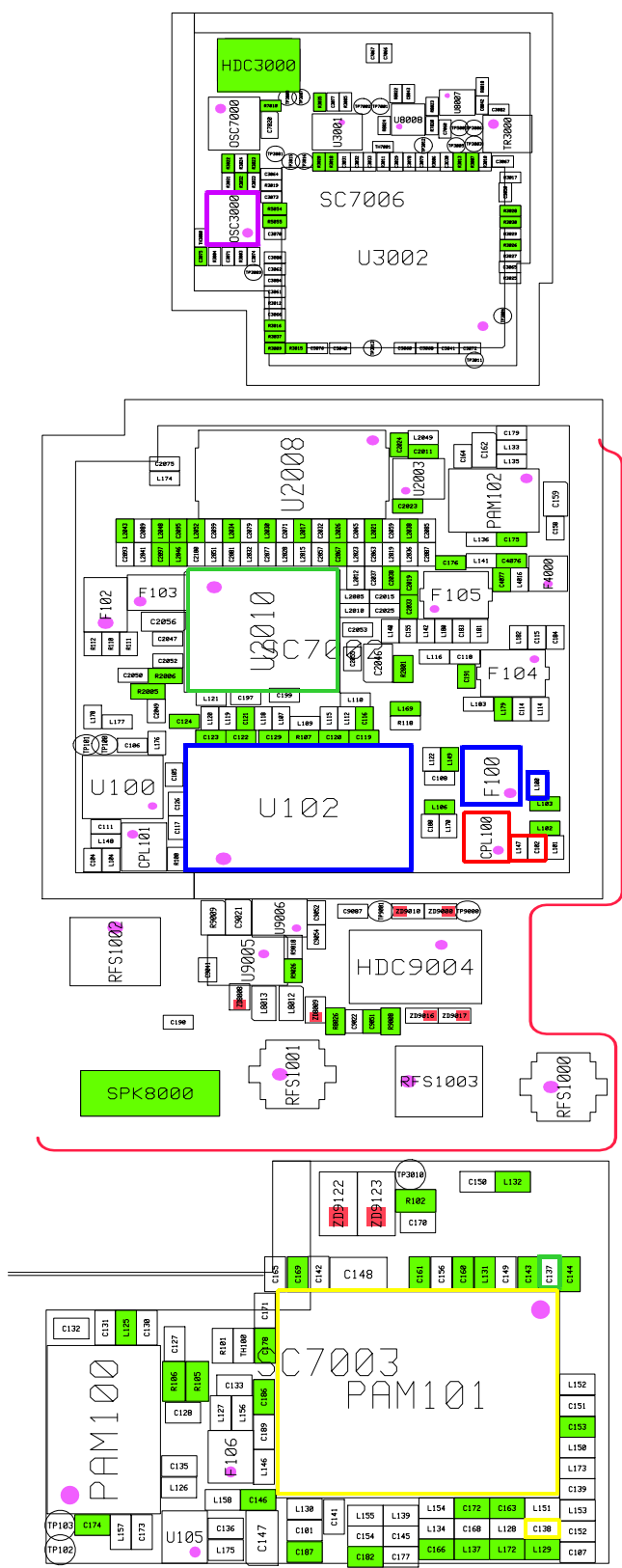
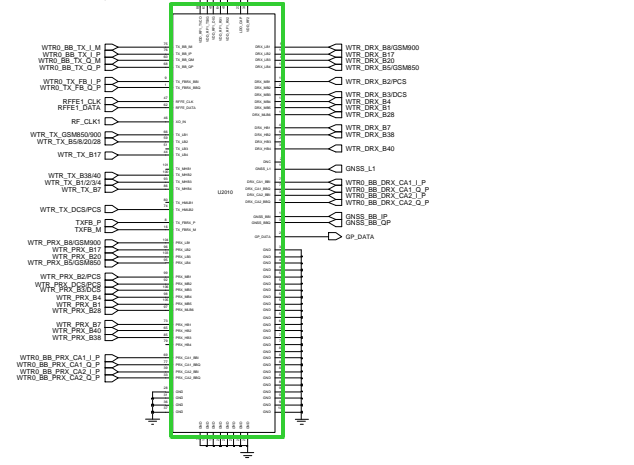
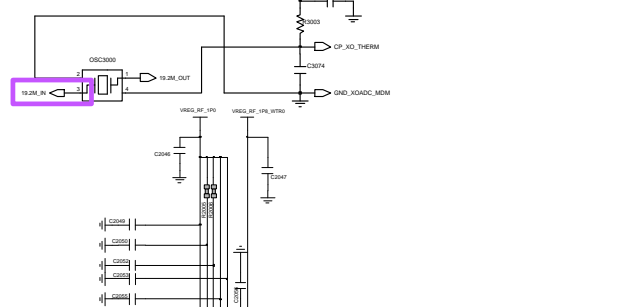
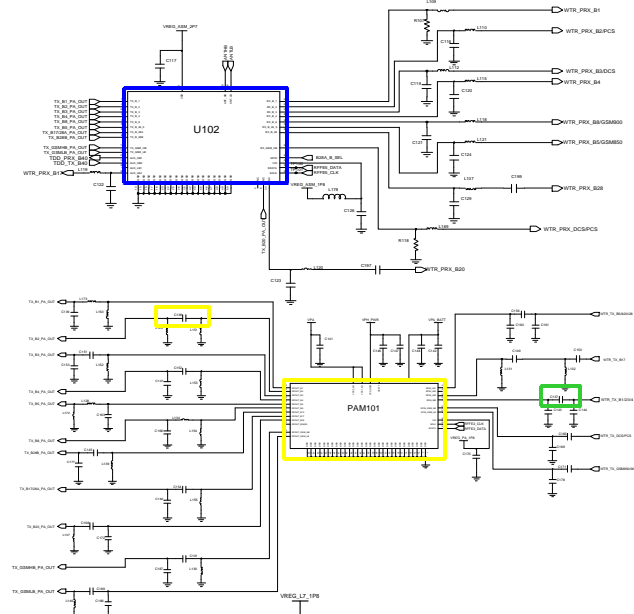
8-3-37. LTE BAND2 / WCDMA BAND2 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 WB2 CH : 9800  
 LTE B2 CH : 900  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB



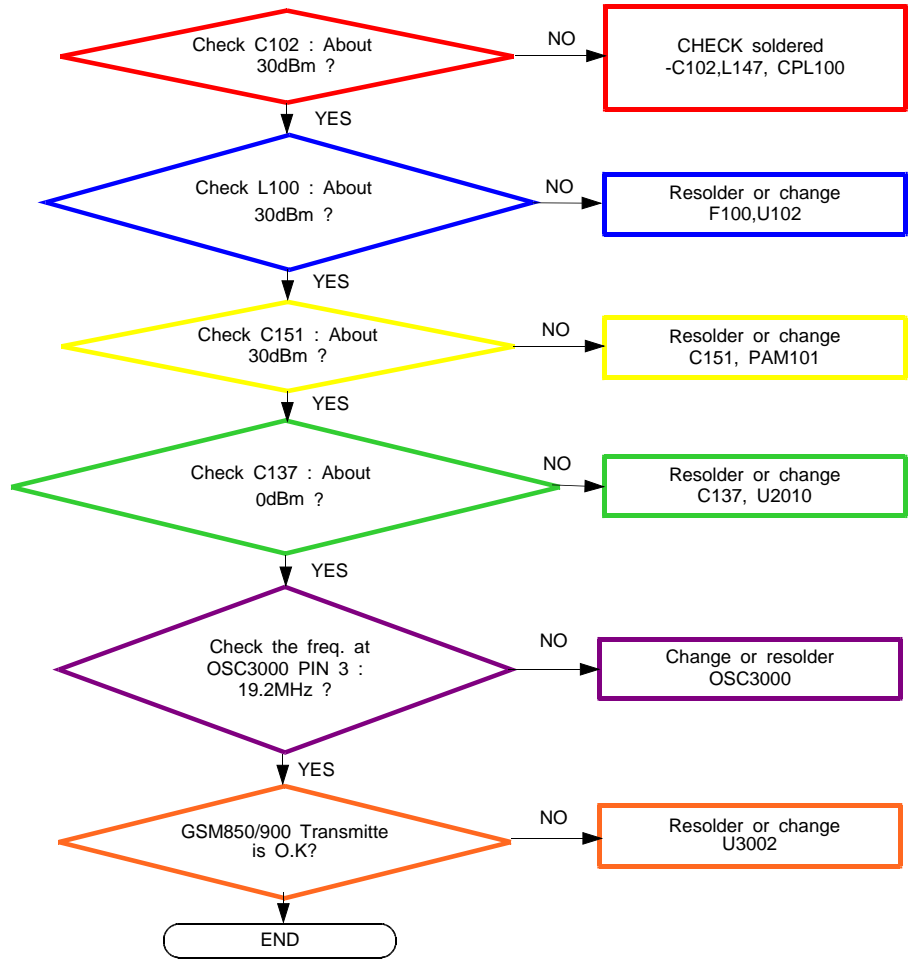


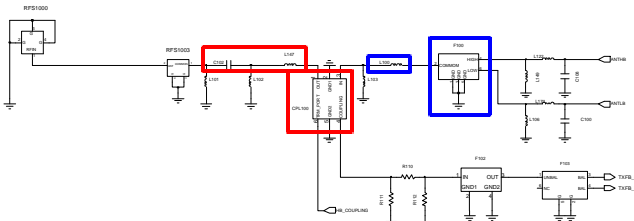
MAIN CA COUPLER



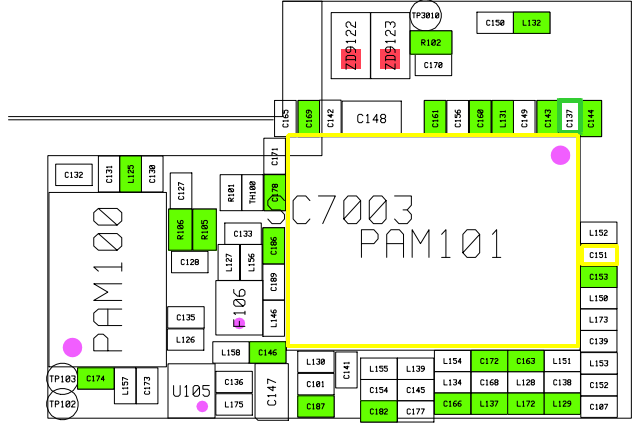
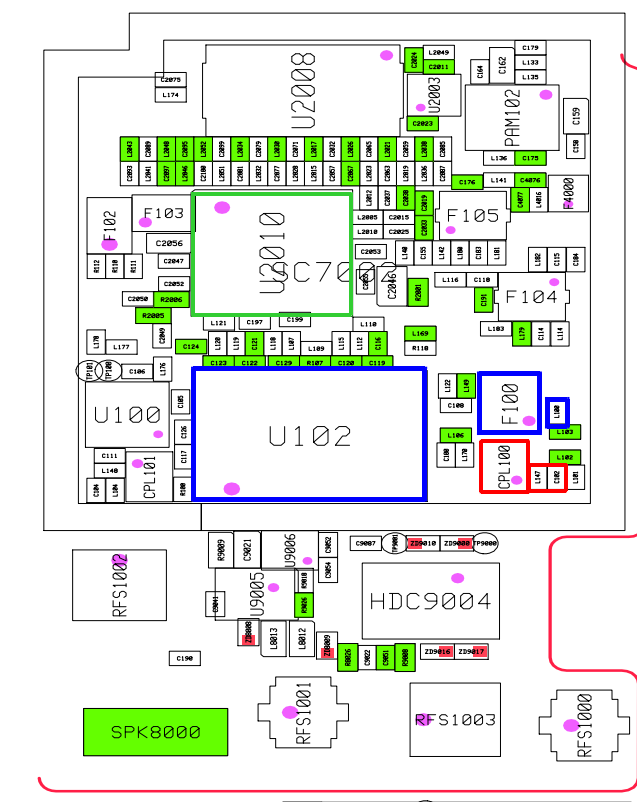
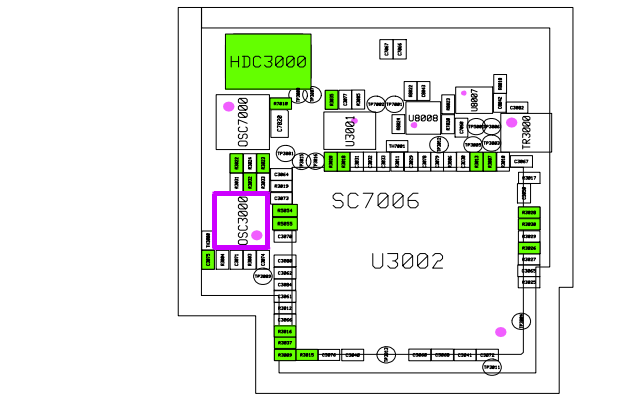
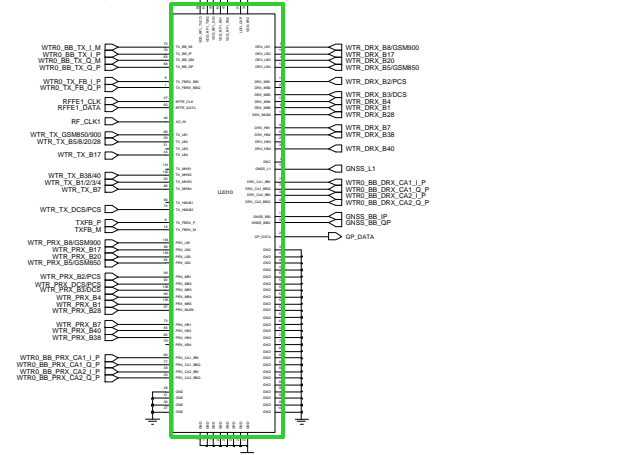
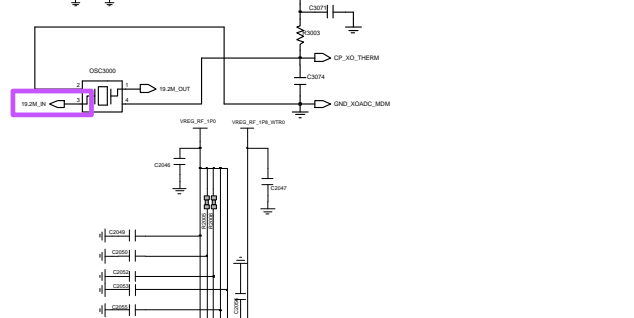
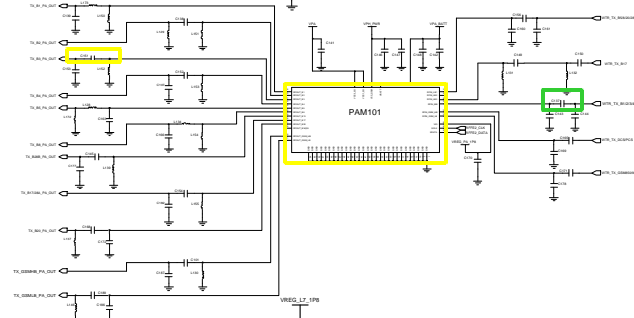
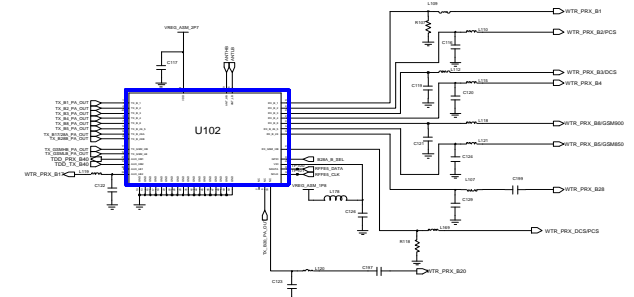
8-3-38. LTE BAND 3 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTEB3 CH : 1575  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB



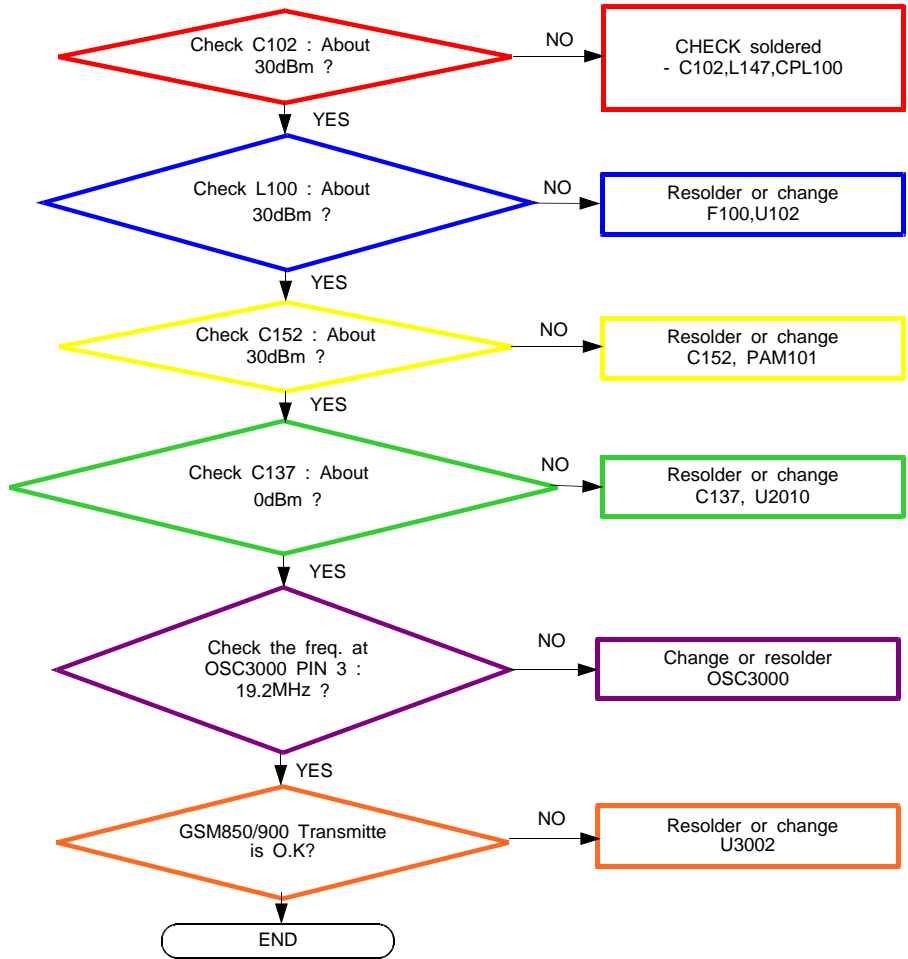


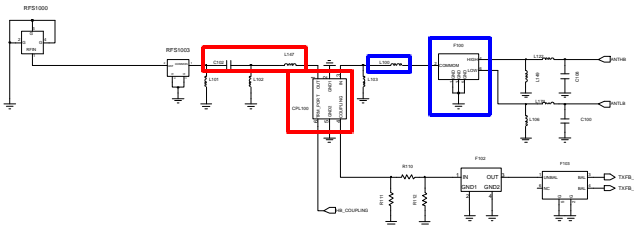
MAIN CA COUPLEXER



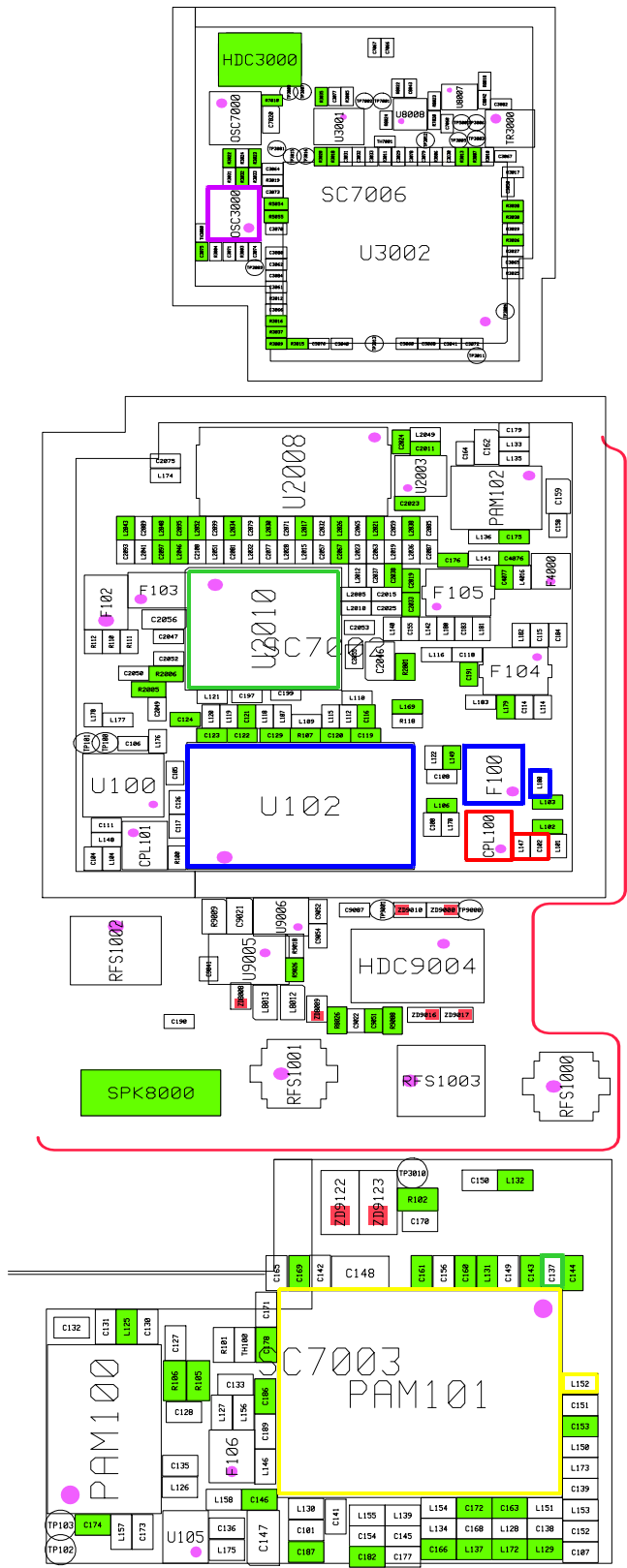
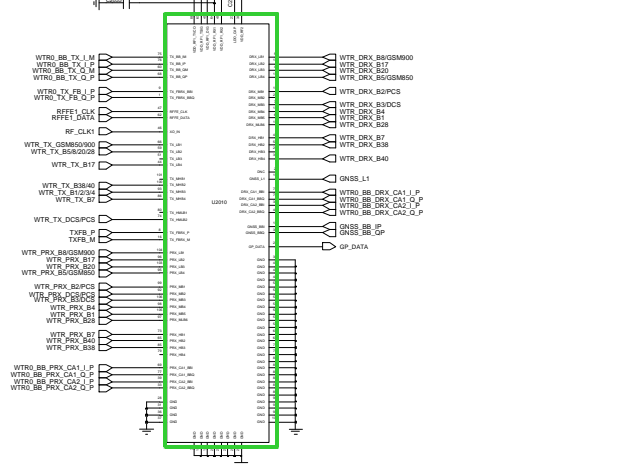
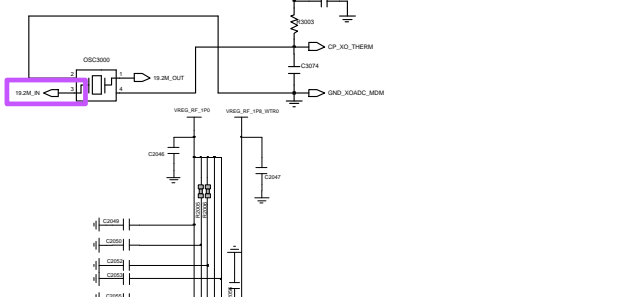
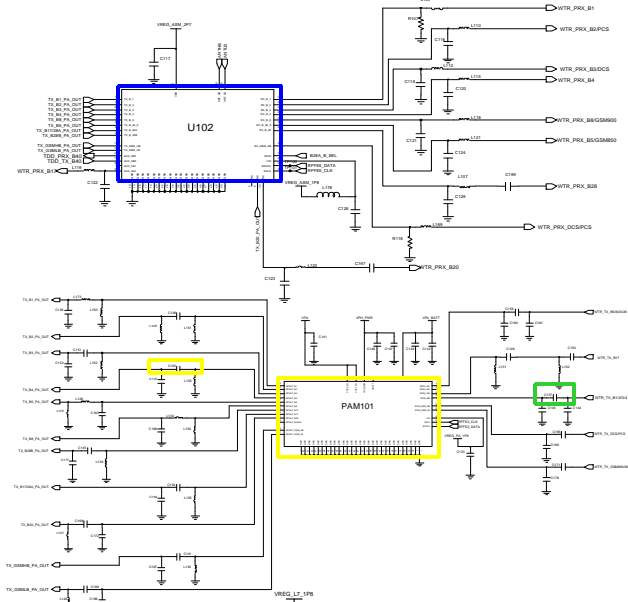
8-3-39. LTE BAND 4 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTEB3 CH : 2175  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB



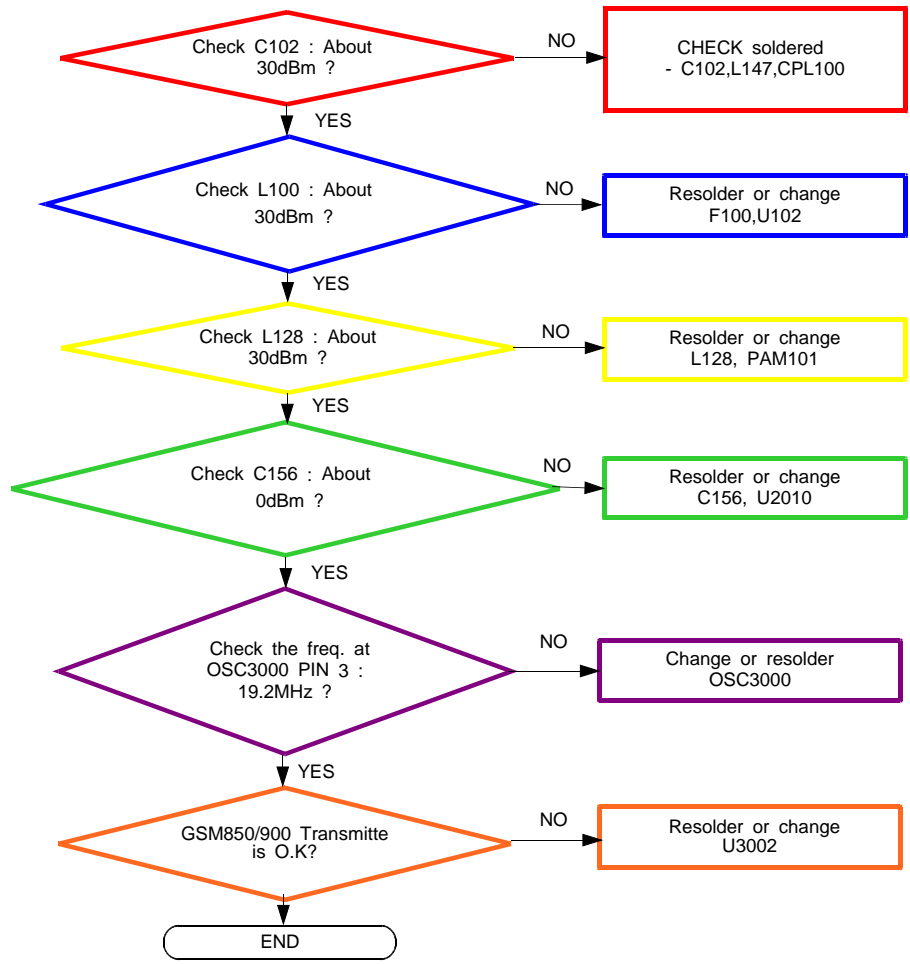


MAIN CA COUPLER

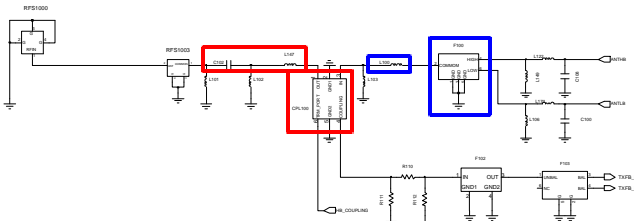


8-3-40. LTE BAND 5 / WCDMA BAND5 TX

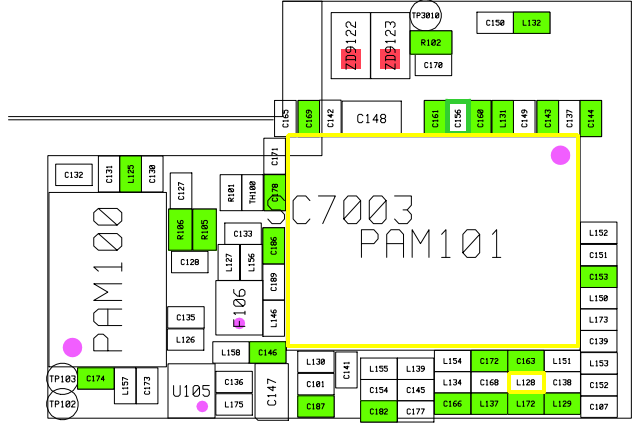
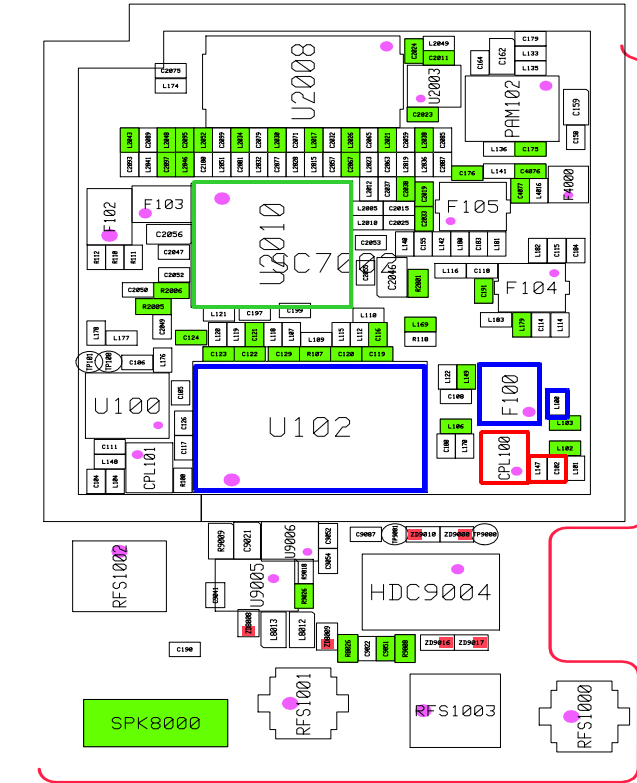
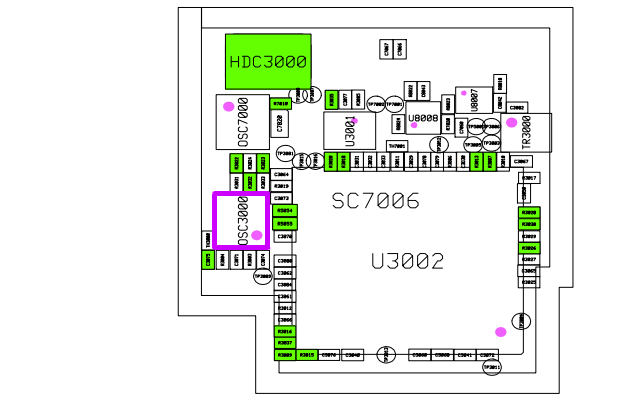
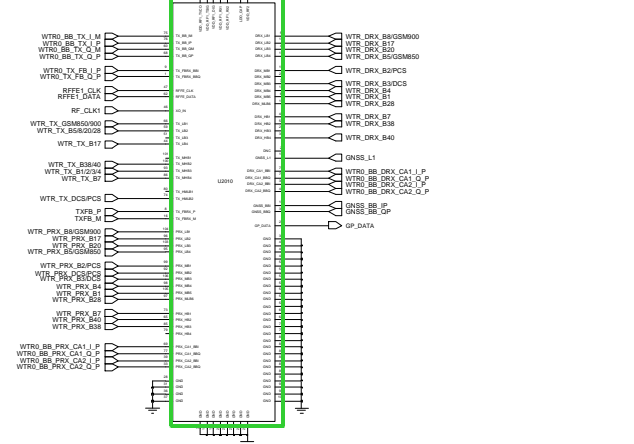
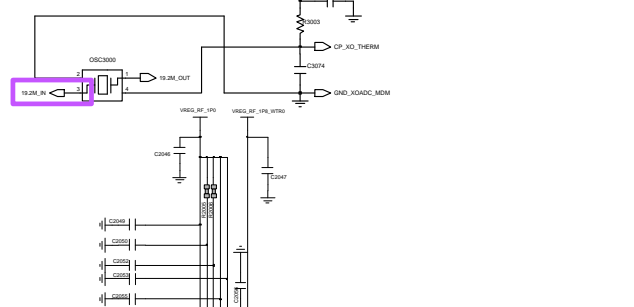
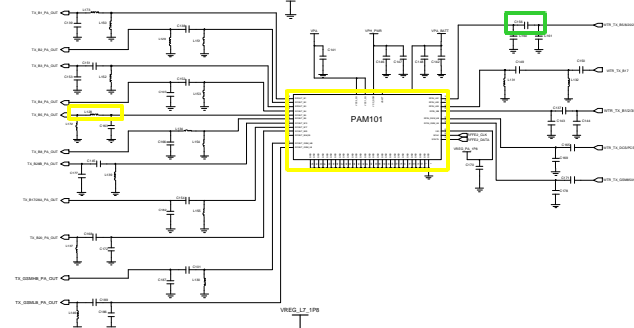
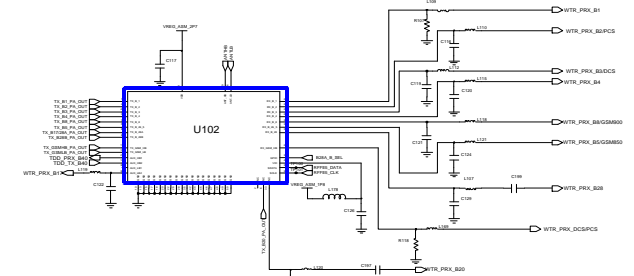
CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 WB5 CH : 4408  
 LTE B5 CH : 2525  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB





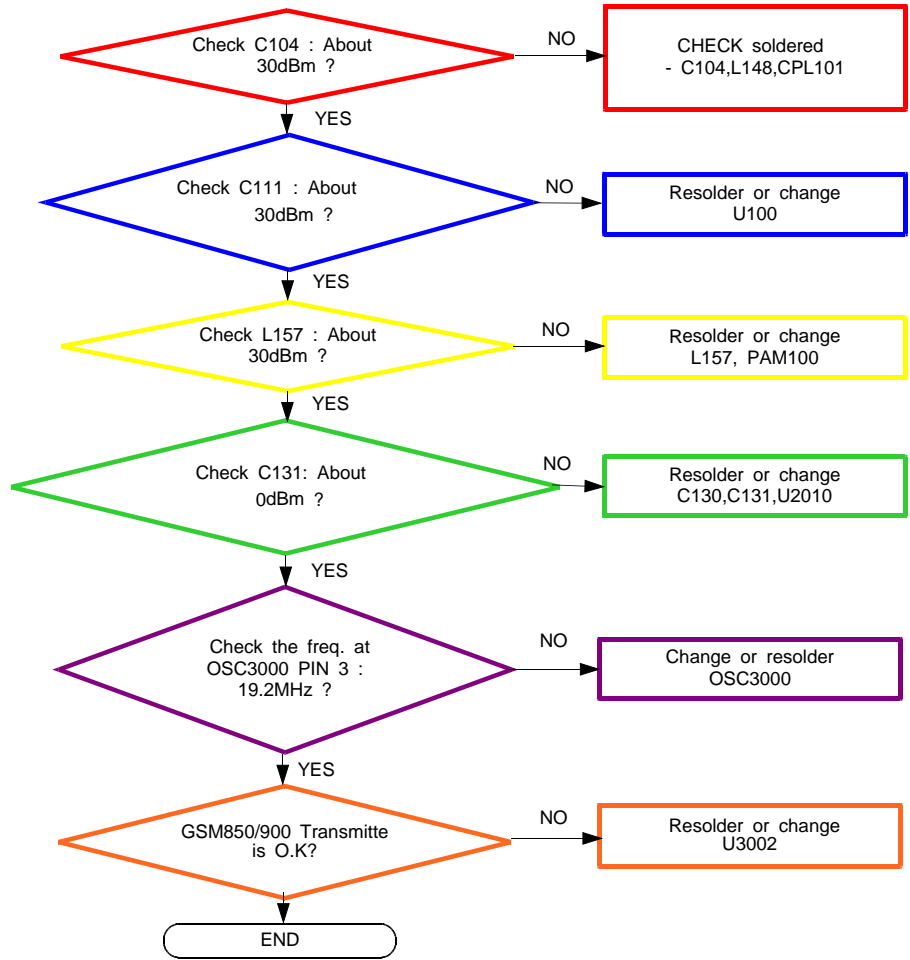


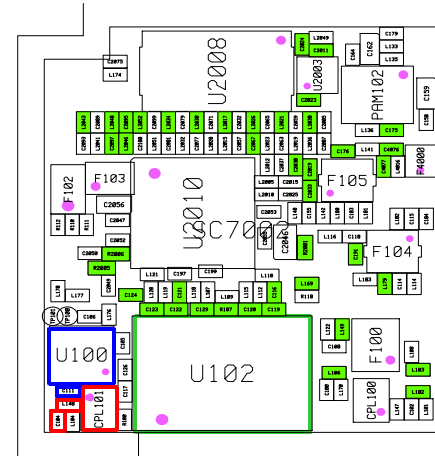
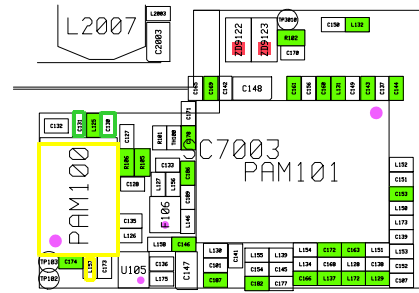
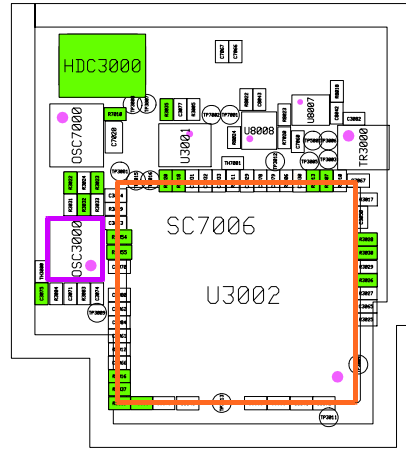
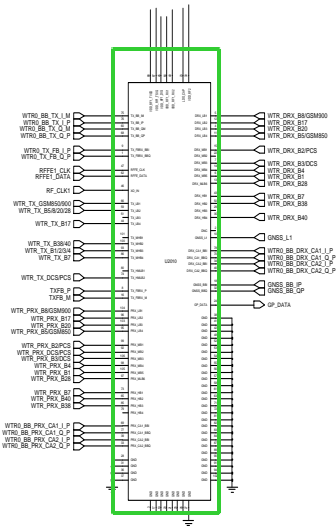
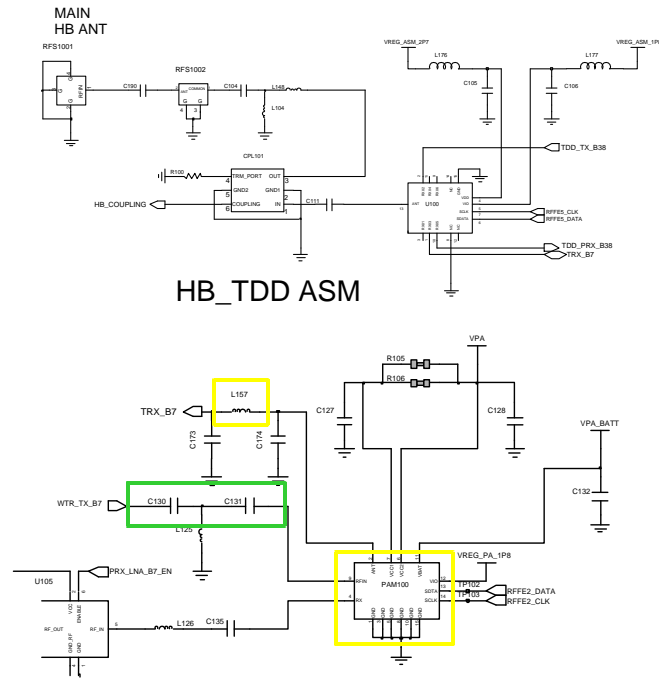
MAIN CA COUPLER



8-3-41. LTE BAND 7 TX

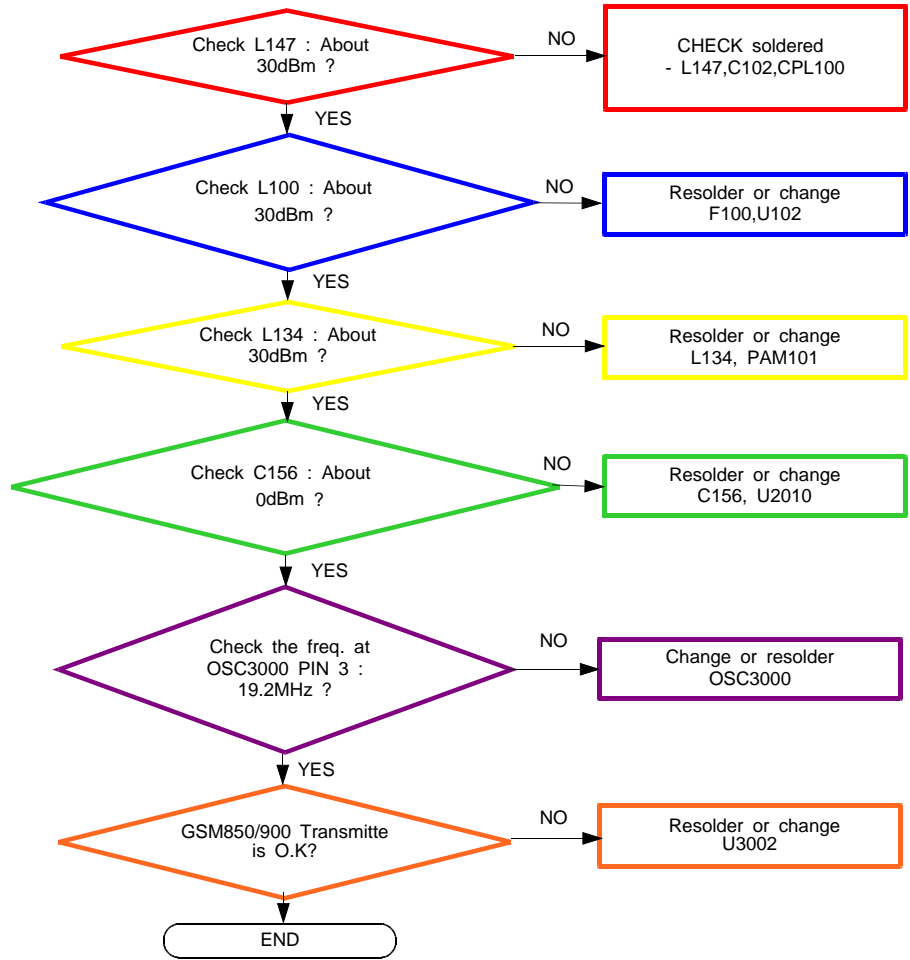
CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTE B7 CH : 3100  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB

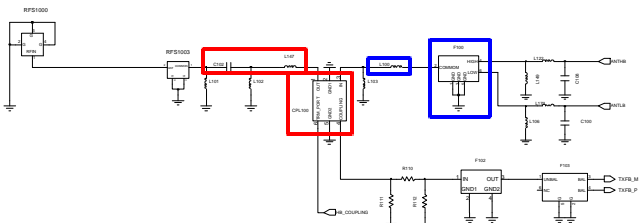




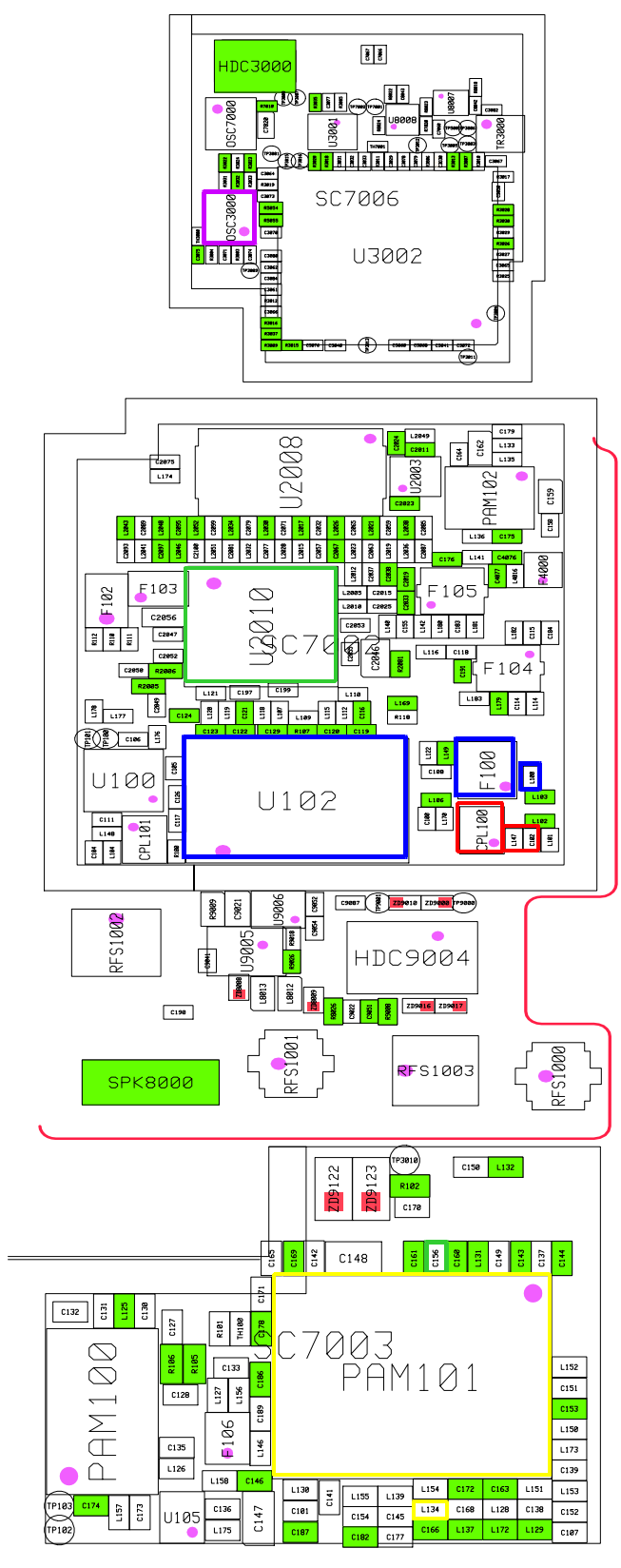
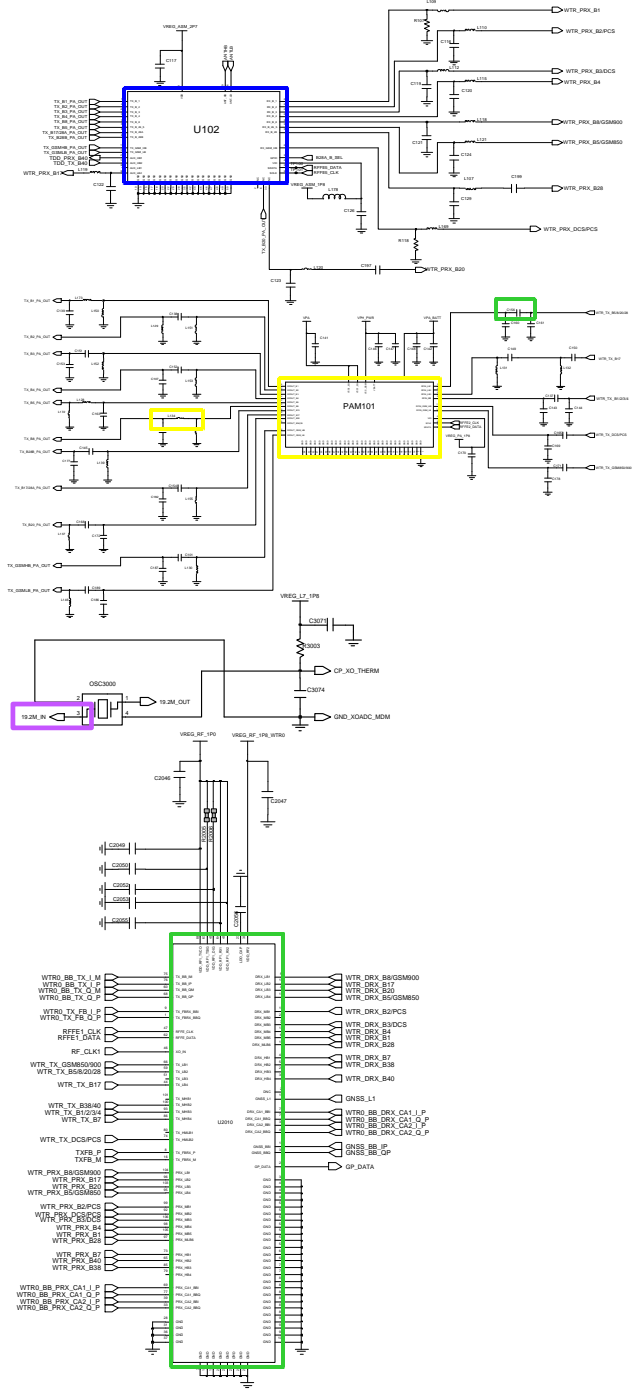
8-3-42. LTE BAND 8 / WCDMA BAND8 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 WB8 CH : 3013  
 LTE B8 CH : 3625  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB





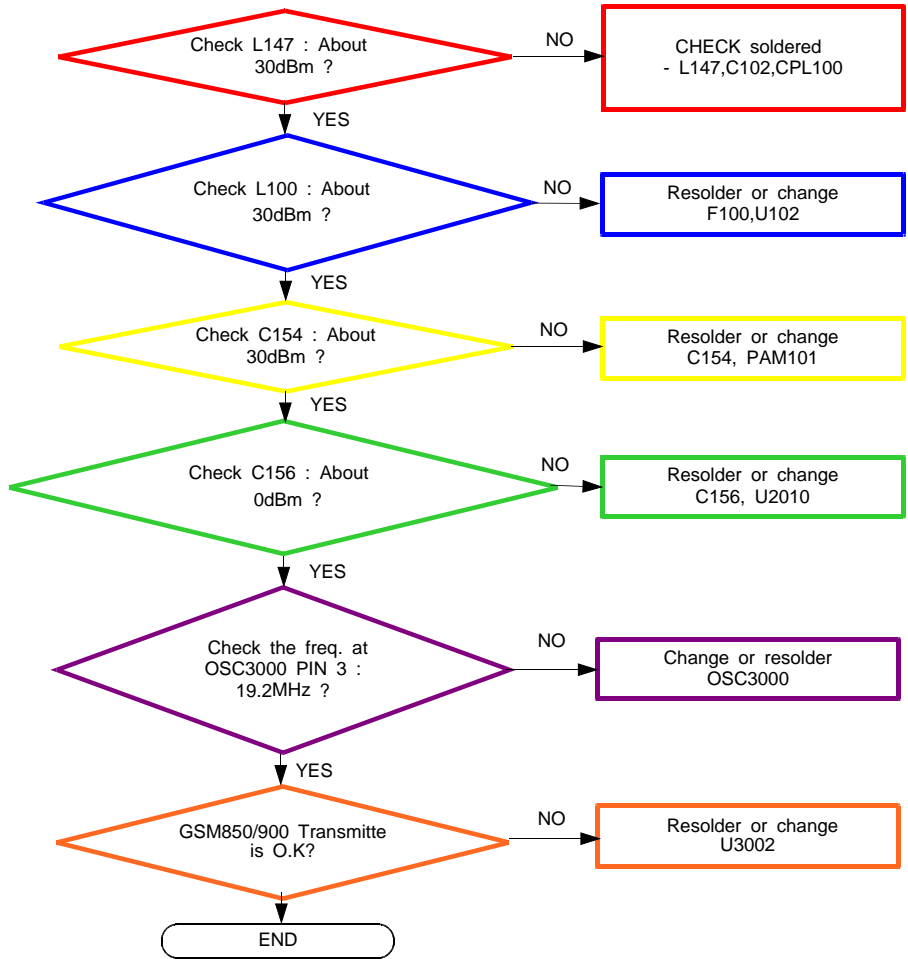
MAIN CA COUPLER

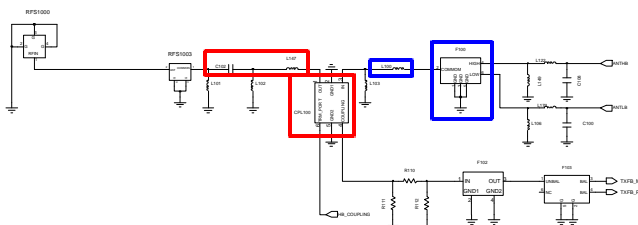


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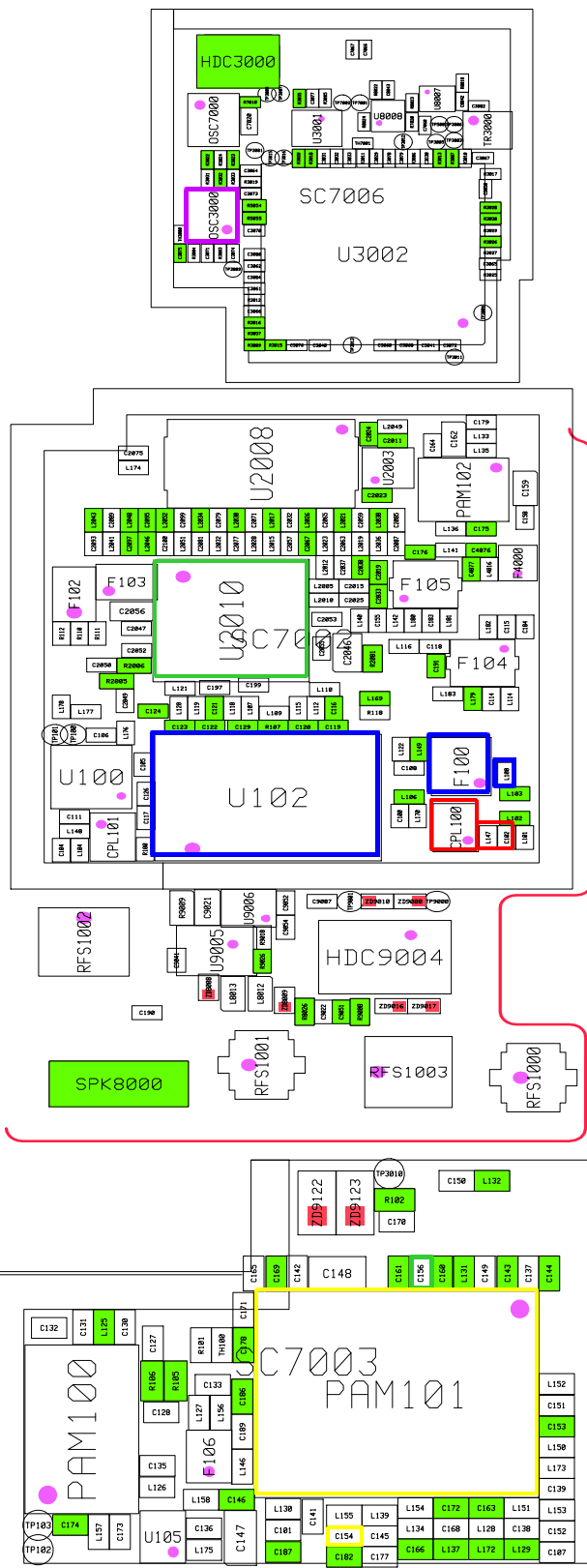
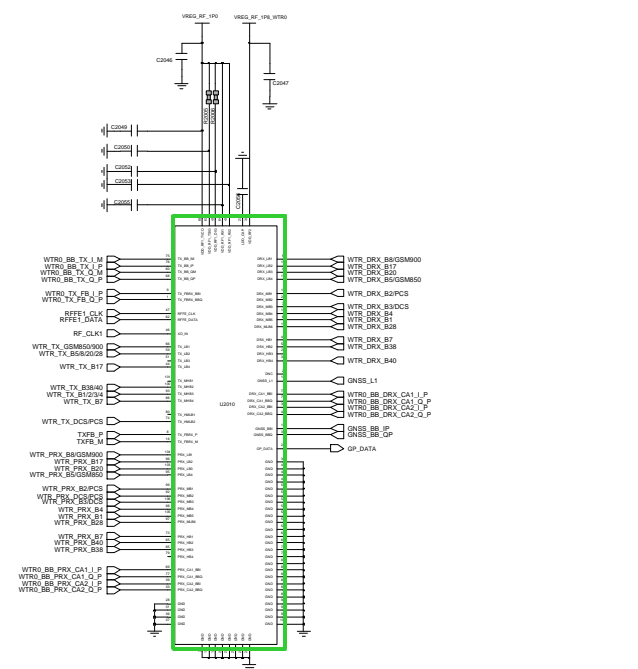
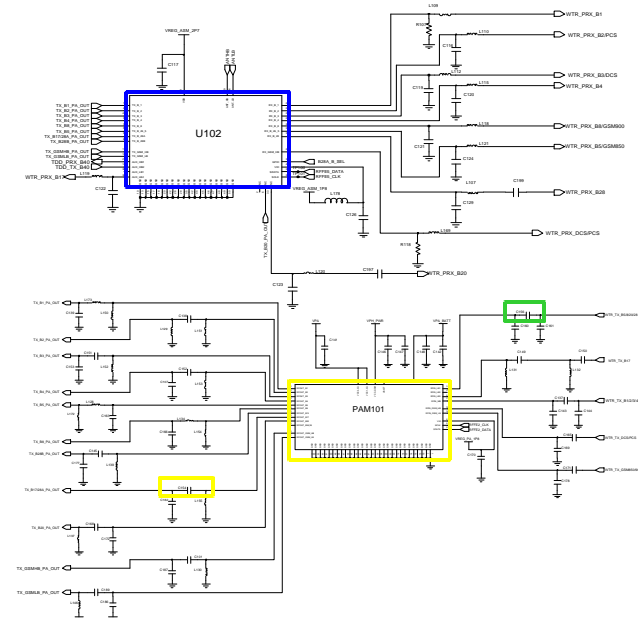
8-3-43. LTE BAND 28 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTE B28 CH : 27210 ~ 27435  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB



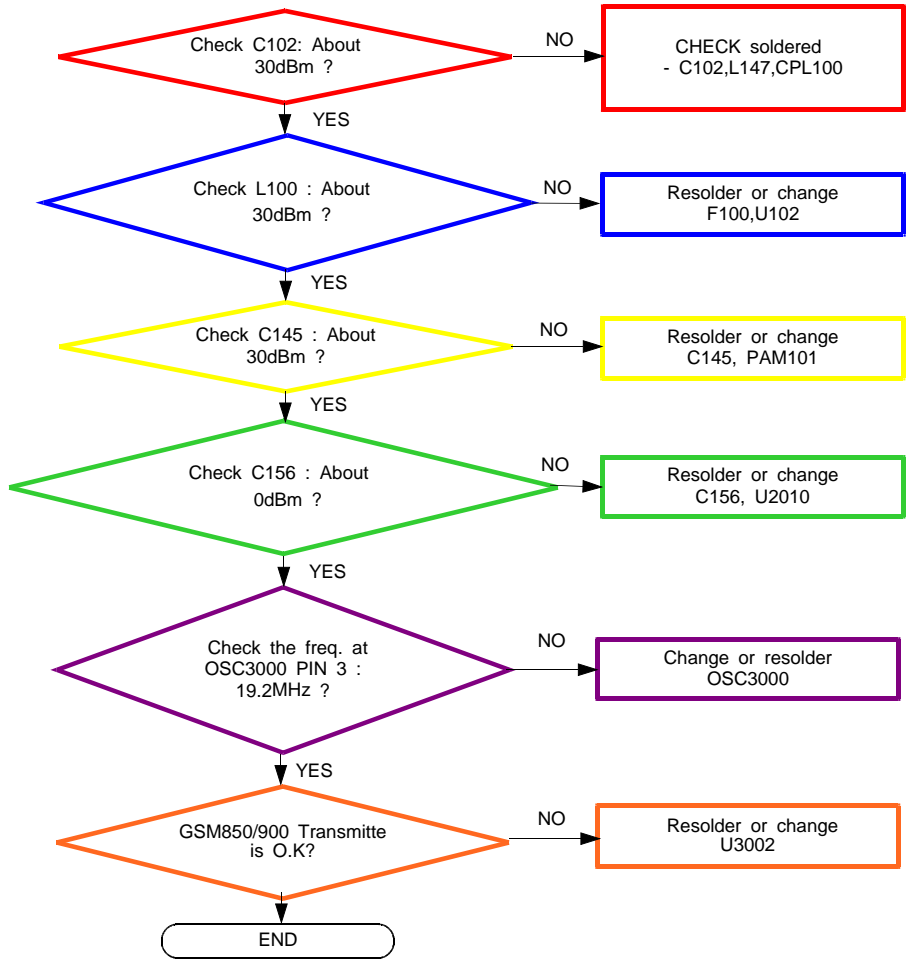


MAIN CA COUPLER

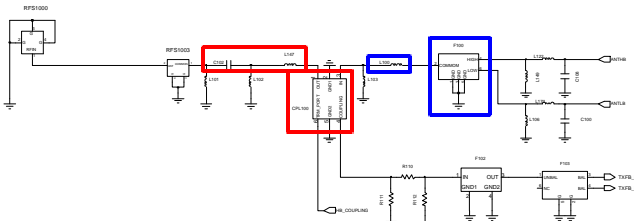


8-3-44. LTE BAND 28\_B TX

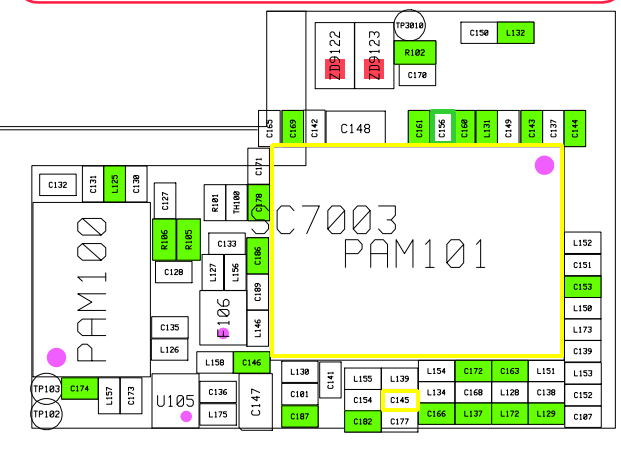
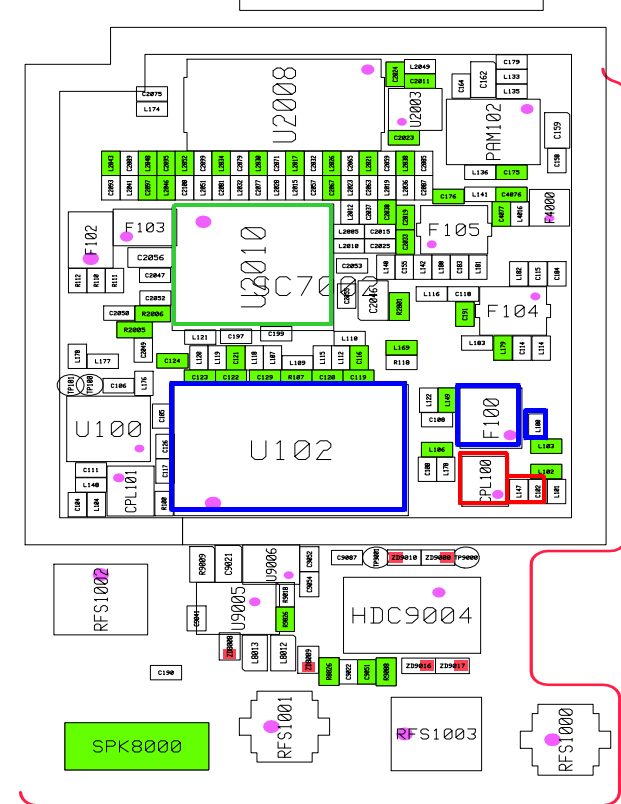
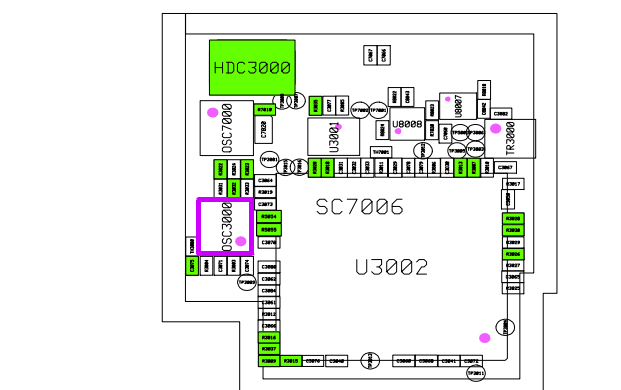
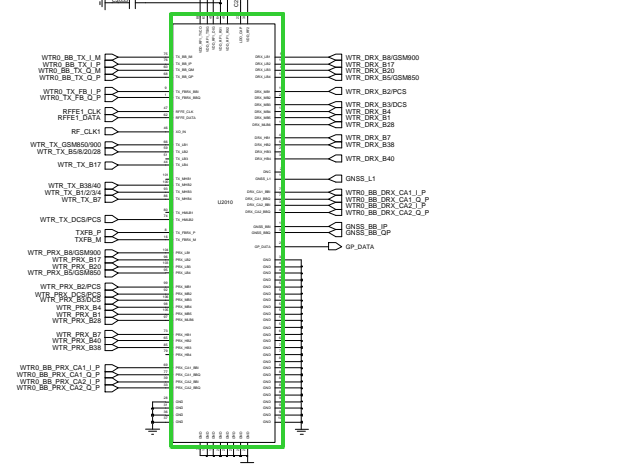
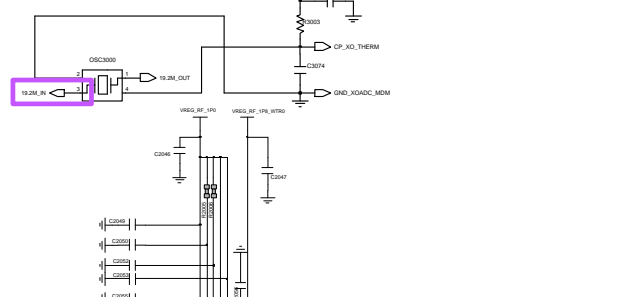
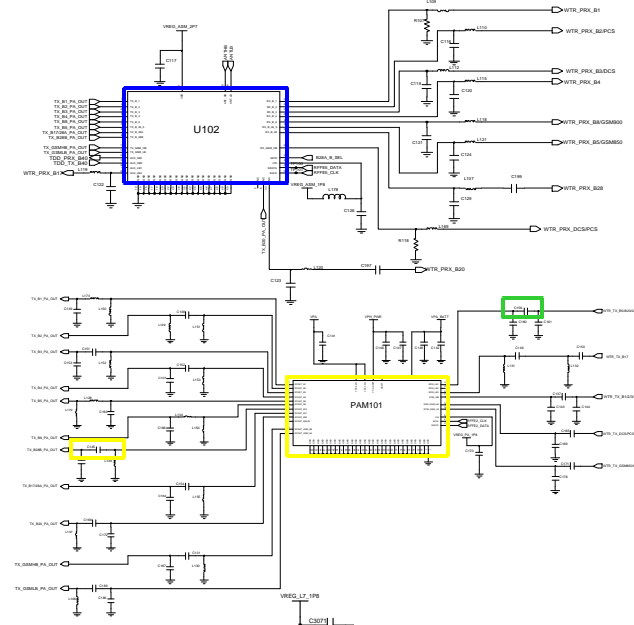
CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTE B28\_B CH : 27435 ~ 27659  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB





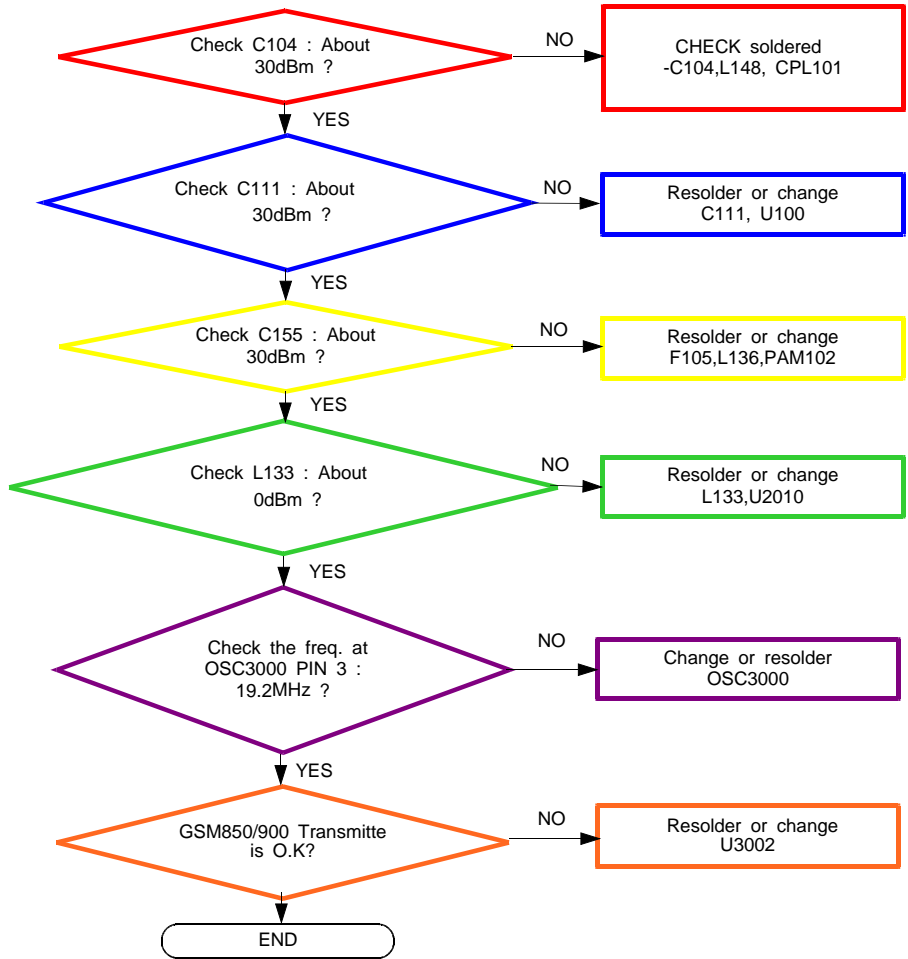


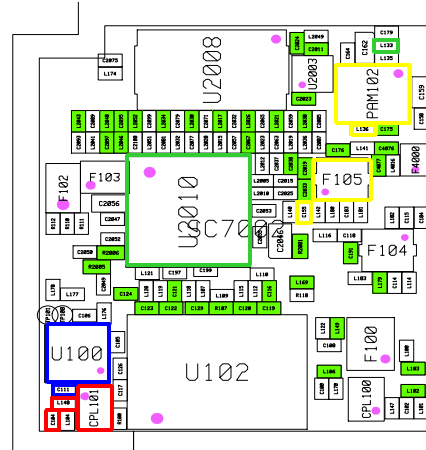
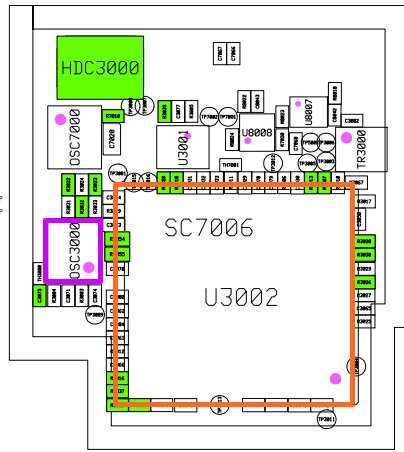
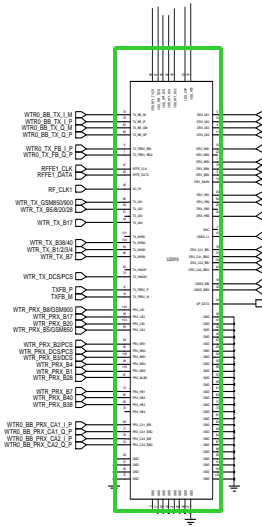
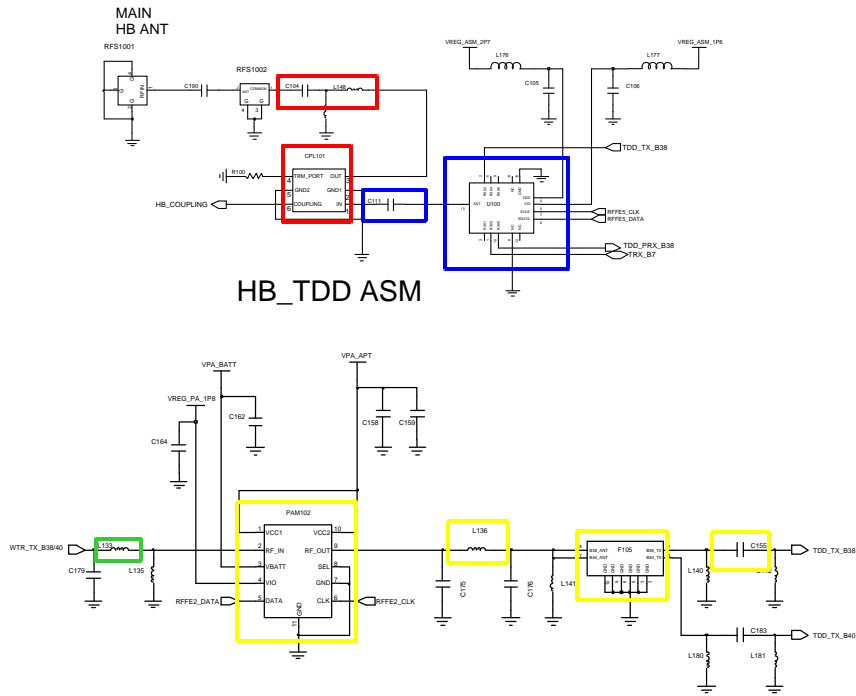
MAIN CA COUPLER



8-3-45. LTE BAND 38 TX

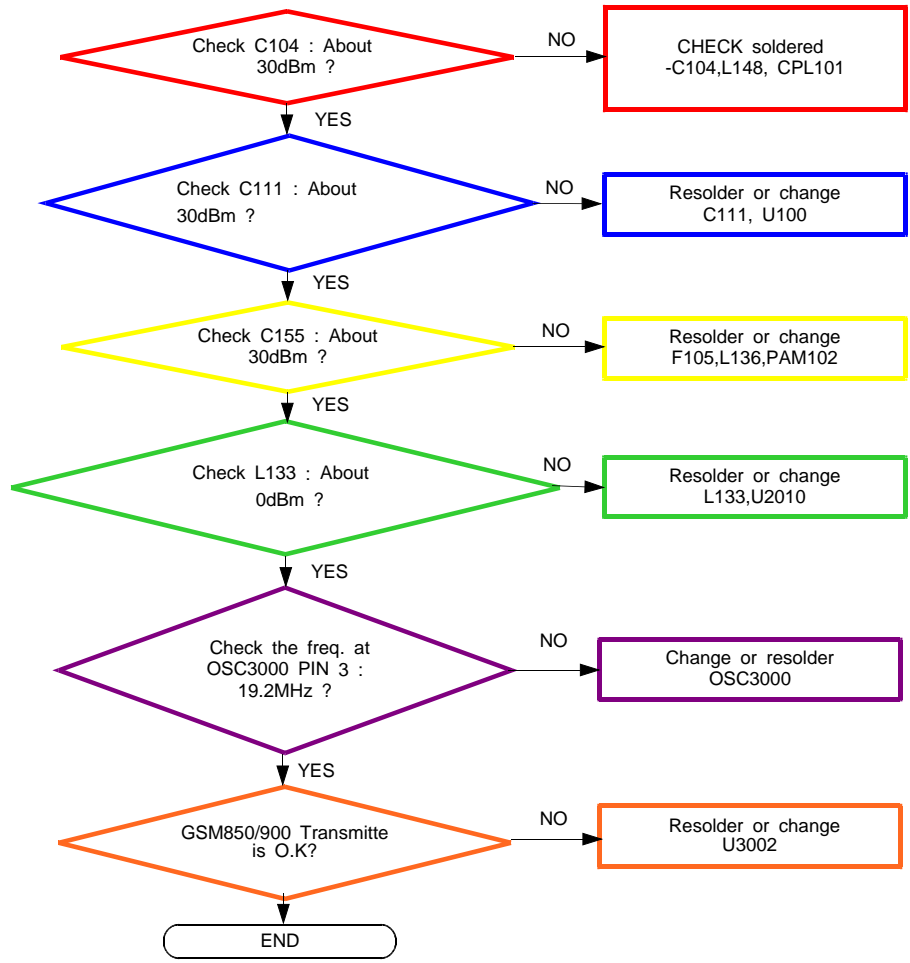
CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTE 38 CH : 38000  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB

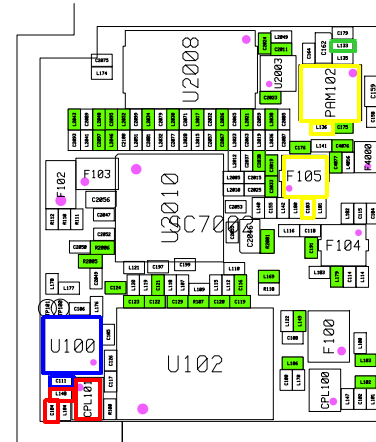
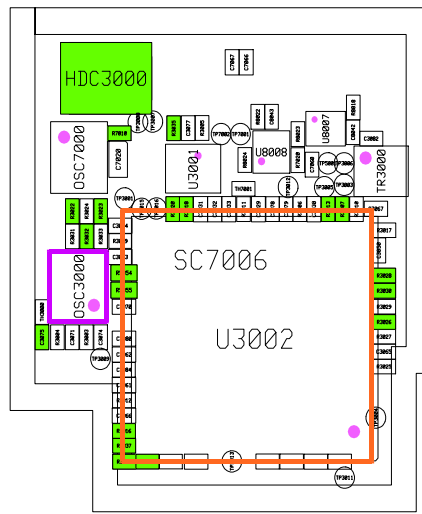
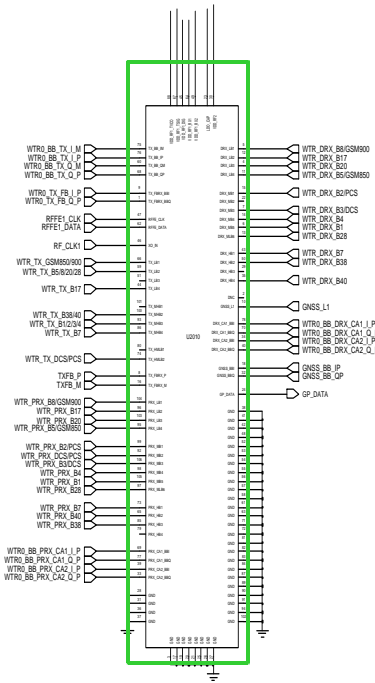
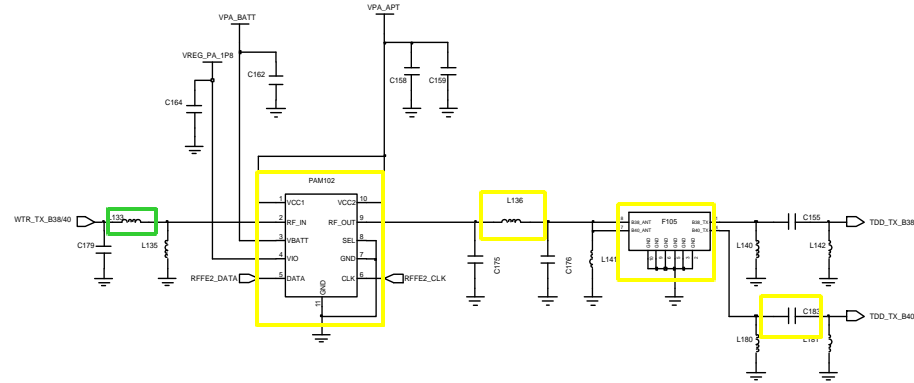
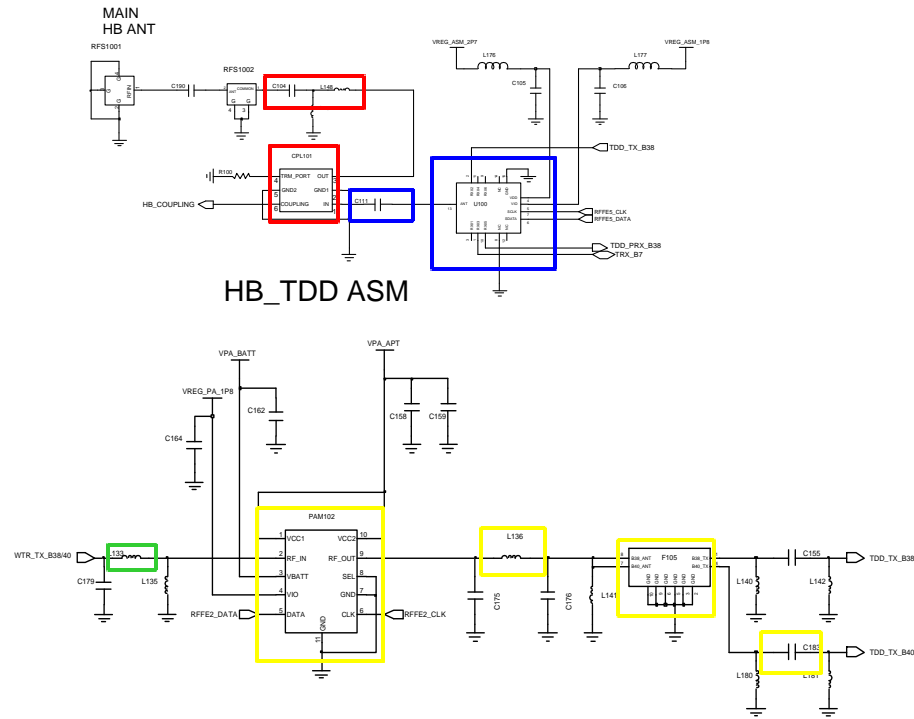




8-3-46. LTE BAND 40 TX

CONTINUOUS TX ON CONDITION  
 TX POWER IDX1 APPLIED  
 LTE B40 CH : 39150  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB





8-4. Service Schematics

1) U7002 AP PMIC(NC Point)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
VDD_S5	VDD_S5	VDD_L16_25	VREG_L15	VDD_LB_12_14_15_26	XTAL_19M_OUT	XTAL_19M_IN	VREG_XO	VREG_RF_CLK	VREG_L24	VDD_L9_12_13_20_23_24	VREG_L20	VDD_L17	VDD_S4	VDD_S4
16	17	18	19	20	21	22	23	24	25	26	27	28	29	
VSW_S5	VSW_S5	VREG_L25	VREG_L12	VREG_L28	VREG_L6	VOUT_LVS2	VDD_L5_7	VREG_L10	VREG_L23	GPIO_01	VREG_L17	VSW_S4	VSW_S4	
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
GND_S5	GND_S5	VREG_S5	BB_CLK1_EN	SLEEP_CLK	VREG_L14	VIN_LVS1_2	BB_CLK2	RF_CLK1	VREG_L13	VREG_L9	GPIO_02	VREG_S4	GND_S4	GND_S4
45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
VDD_S3	VDD_S3	VREG_L16	REF_BYP	GND_REF	RESIN_N	VOUT_LVS1	BB_CLK1	RF_CLK3	RF_CLK2	GPIO_08	GPIO_06	VREG_L8	VDD_L8	VDD_S1
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
VSW_S3	VSW_S3	PON_1	PS_HOLD	KYPD_PWR_N	AVDD_BYP	AMUX_HW_ID	DIFF_CLK_N	DIFF_CLK_P	AMUX_1	AMUX_2	VREG_S1	GPIO_03	VSW_S1	VSW_S1
75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
GND_S3	GND_S3	VREG_S3	PON_RESET_N	XTAL_32K_OUT	AMUX_PU1	GND	GND_XO	GND_RF	GND_XOADC	AMUX_3	VREF_NEG_S1	GPIO_04	GND_S1	GND_S1
90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
VDD_S7	VDD_L19	VREG_L19	GPIO_14	XTAL_32K_IN	CBL_PWR_N	GND	GND	GND	VREF_XO_THM	AMUX_4	VREG_S12	GPIO_05	VDD_S12	VDD_S12
105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
VSW_S7	VSW_S7	GPIO_19	VREF_NEG_S7	VREG_S7	GPIO_12	GND	DNC	GND	VDD_SNS	XO_THERM	VREF_NEG_S12	GPIO_07	VSW_S12	VSW_S12
120	121	122	123	124	125	126	127	128	129	130	131	132	133	134
GND_S7	GND_S7	SHDN_N	SPMI_CLK	SPMI_DATA	GPIO_13	GND	GND	GND	AMUX_5	GND	VREG_MVS	VIN_5V	GND_S12	GND_S12
135	136	137	138	139	140	141	142	143	144	145	146	147	148	149
VDD_S6	VDD_S6	OPT_2	VREF_NEG_S6	VREG_S6	MPP_04	MPP_02	GPIO_20	GPIO_11	AMUX_USB_ID	VREG_S2	MPP_05	VREG_L22	VDD_L22	VDD_S2
150	151	152	153	154	155	156	157	158	159	160	161	162	163	164
VSW_S6	VSW_S6	OPT_1	MPP_03	GPIO_22	VREF_NEG_S8_9_10_11	MPP_01	VREF_EB11_CA	VREF_EB10_CA	VREG_S9	MPP_08	VREF_NEG_S2	MPP_06	VSW_S2	VSW_S2
165	166	167	168	169	170	171	172	173	174	175	176	177	178	179
GND_S6	GND_S6	VCOIN	VREG_S11	GPIO_21	VREG_S10	VREF_EB11_DQ	VREF_DDR_IN	VREF_EB10_DQ	GPIO_18	MPP_07	VREG_S8	VREG_L18	GND_S2	GND_S2
180	181	182	183	184	185	186	187	188	189	190	191	192	193	194
VREG_L4	VREG_L27	VREG_L2	VDD	GPIO_10	GPIO_09	VIN_LVS3_4	VOUT_LVS4	VDD_MSM_IO	GPIO_17	GPIO_16	GPIO_15	VREG_L11	VDD_L18	VDD_L21
195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
VDD_L2_3_4_27	VREG_L3	VSW_S11	GND_S11	VDD_S10	VSW_S10	GND_S10	VOUT_LVS3	VSW_S9	GND_S9	VDD_S8	VSW_S8	GND_S8	VDD_L1_11	VREG_L21
210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
GND	VDD_S11	VSW_S11	GND_S11	VDD_S10	VSW_S10	GND_S10	VDD_S9	VSW_S9	GND_S9	VDD_S8	VSW_S8	GND_S8	VREG_L1	VDD_L1_11

2) U7000 CP PMIC(NC Point)

1 GND_ S4		2 VSW_ S4		3 VREG_ L6		4 MPP_ _05		5 VDD_ S1		6 GND_ S1
12 VREG_ S4	7 GND_ S4	13 MPP_ _01	8 VDD_ S4	14 VDD_ L5_6_15	9 MPP_ _04	15 GPIO_ _02	10 VREG_ _S1	16 VDD_ S1	11 VSW_ S1	17 GND_ S1
23 VDD_ L7_8	18 VREG_ L7	24 VDD_ XO_RF	19 VREG_ L5	25 SPMI_ _CLK	20 MPP_ _06	26 GPIO_ _01	21 GPIO_ _03	27 VSW_ S1	22 VSW_ S1	28 GND_ S1
34 VREG_ _XO	29 VREG_ L8	35 BB_ CLK	30 VREG_ L15	36 GND	31 SPMI_ _DATA	37 GPIO_ _04	32 GPIO_ _05	38 GPIO_ _06	33 GND_ S1	39 VREG_ _L3
	40 GND_ _XO	45 LN_BB_ CLK	41 GND_ XOADC	46 GND	42 OPT_ _2	47 VIN_ VPH2	43 RESIN_ _N	48 VREG_ _L4_16	44 VDD_ L3_4	49 GND_ S3
	50 GND_ RF_CLK	56 BB_CLK_ _EN	51 MPP_ _02	57 GND	52 OPT_ _1	58 CBL_ PWR_N	53 BAT_ID_ _THERM		54 GND_ S3	59 VSW_ S3
55 XTAL_ 19M_IN	60 VREG_ _RF	66 RF_CLK1	61 MPP_ _03	67 GND	62 GND	68 GND_ REF	63 PON_ RST_N		64 VSW_ S3	70 VDD_ S3
65 XTAL_ 19M_OUT	71 GND_ XO_CLK	77 RF_CLK2	72 SLEEP_ _CLK	78 VREF_ DDR2	73 VDD_ OTP	79 REF_ BYP	74 AVDD_ _BYP	69 VREG_ S3	75 PON_ _1	81 VREG_ L2
76 XO_ THERM	82 PS_ HOLD	88 PA_ THERM2	83 PA_ THERM1	89 VDD_ L9	84 VREG_ _L10	90 VIN_ VPH1	85 VREG_ _L12	80 VREG_ L1	86 VDD_ L1_2_16	92 VDD_ _S2
87 VREG_ _S5	93 GND_ S5	94 VDD_ _S5	94 VDD_ _S5	100 VREG_ _L9	95 VREG_ _L11	96 VREG_ _L13	91 VREG_ _S2	97 VSW_ S2	97 VSW_ S2	103 VDD_ _S2
98 GND		99 VSW_ S5				101 VREG_ _L14	102 GND_ S2			